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gaaacaactg	tggcttttat	tgattatttg	aagagtctga	aagggtttgt	ttcctctgag	1620
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<210> 1625

<211> 228

<212> DNA

<213> B.fragilis

<400> 1625

tctcacacac	ttttttttct	acaagcatat	cctatgccaa	tatccattct	ctgccatact	60
ctgcctacat	atgattttac	tgcaccatgg	tcctatgtgc	aaccctctc	cagatccac	120
gctaatagcac	cccgttttct	ggctgacctg	aatccggcag	ataaattcat	ggagctcaat	180
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<210> 1626

<211> 777

<212> DNA

<213> B.fragilis

<400> 1626

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gaagagtcga	aaactctccg	tatcaatccc	gaaatgccta	tccttgccga	atcatctgct	180
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aaatttgctg	atgtacaggt	gattttccat	aagatggaac	agcgtaccct	tacggctgct	420
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<210> 1627

<211> 1107

<212> DNA

<213> B.fragilis

<400> 1627

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ggaatcactt	ctgtagtaaa	agcacatgaa	acaggagaac	aatggaaaaa	gtttcattgt	180
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ttaagaacat	cagtcaatag	aaaacttata	ttctgacgga	ttgctcttct	gtttagaaag	360
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ggcaatatata	agcattttat	cgaactatct	aataaacttc	ttgtactatc	tcccaaattg	480
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ctatcagaca	gaaaaggcta	caaccgactt	attgaagcat	tcagtaaaat	tgctgcaaaa	660
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<210> 1628

<211> 1137

<212> DNA

<213> B.fragilis

<400> 1628

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aataccagca	ataatcatgc	aggtataaaa	tacttatgca	accaaattca	ggagatgtat	180
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aaaaagttgt	acaatcacat	aatatcaaag	ctacgaaaag	gagataaaat	aattccttatg	360
gaatacatgg	agaaattttt	tcccatgctc	cattttgcac	aaaaagtga	aagatataaa	420
ttcaacatac	ctctctacgc	aatggttcac	cttggtccaa	gccggttgga	aaaaggattc	480
tcagacaaga	aaacatttga	tgaatggaca	atctgcatcg	ataaatttct	tacccttggc	540
cattcattaa	cccaattcct	tattaccaa	gggtacctg	aagataaagt	tgttaccacc	600
tttcattatg	tggatgaata	ttaccataac	aaaagacctg	tacgtttgca	taagaatatac	660
cgtgtaatatg	ccatgggtaa	tcagatgaga	aacctcaaac	tactaaaaac	aatcgttgat	720
aataacccta	atgtcaattt	taccatttgc	caaggggtaa	atgatttgct	atcctatttc	780
ctgaaaaata	caaagtgcga	actcatccca	tttggtgagg	aatccgagtt	acgacagcac	840
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tattgtgatg	atagtaaacac	tatatatttgt	aataactcta	atgtagaaga	cttctctcag	1020
gctataaccg	cattacaaac	agatagaata	cgattgaata	caatgcaaca	atcggcagcc	1080
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<210> 1629

<211> 897

<212> DNA

<213> B.fragilis

<400> 1629

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aacttgatct	actctttaga	acaaaaacat	cgtgtgcaga	ccgtcgaaga	gttgattgct	180
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aaactgacgg	aacggcgcgga	tgcacaatat	aataaggtaa	agaagcaagc	cgctgtcttg	300
acaaaggccc	gtacagagat	tgcccgtgaa	gtggagcaac	agatggctgc	ccgtttgatt	360
cctttgggaa	taccaaatgt	ccgctttcaa	gtggagatgg	ggttgaaaaa	agaaccgggt	420
ccacagggcg	cggatactgt	taattttctt	ttctcagcca	acaaaaacgg	aacgctgcaa	480
agcgtgtctt	ctgttgcgtc	gggtgggtgag	atagctcgctg	ttatgttatc	tattaaggct	540
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gtgtataagc	gggataatga	tacggagact	aacagtcata	tccgtcgttt	gaccgatgaa	780
gaacgggtag	aggaactggc	tcacatgttg	agtggtgcc	ccctgacgga	ggcggcgctg	840
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<210> 1630

<211> 792
 <212> DNA
 <213> B.fragilis

<400> 1630
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 ggcgcaatcg gacttttact cggacaacgt gccgatgtga aagctatccg gcaaggcgct 180
 tctaaatgtg tcatcgaggc acgattcgat atatcggcct atcacatgga agcctttttt 240
 gaagagaacg agttagagta tgagcccgaa tgcatacttc gtcgtgaagt acagtcattcc 300
 ggtaaaaagta gggcatttat caatgataca cctgcttcgc tcacacaaat gaaagaactg 360
 ggtgagcaat tgatcgatgt acactctcaa catcagaacc tattgctcaa taaggagggc 420
 ttccagctta atgtgctcga tattctttcc cataacgaag aggctttgga tgtataccat 480
 catttatatc aggattggaa aaaactctgt aaggaaactc atgaactgat tgttctggct 540
 gaacaaagta agacggatga ggattatatt cgttttcagt tggaaacaact ggaggaggcg 600
 catcttacgg ccggagaaca ggaagagttg gaacaagagg ccgagacatt ggcacacgcc 660
 gaagacatca aggccggact gtaccgggtg gggcaaactc ttgcttcaga tgaaggaggg 720
 ctgcttgccct gtattgaaag aaagtcttgg cgctttgagt gggctgcaga aagtatatca 780
 acctgccggt ga 792

<210> 1631
 <211> 456
 <212> DNA
 <213> B.fragilis

<400> 1631
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 tttaaaatca cagattatat gaaatttatc gtttcaagta ctgcactttt cagccattta 180
 caggctgtta gccgtgtgat aaactcaaaa aatgcactgc ctattttaga ttgttttctc 240
 tttcagttgg aggacggaac actgtctgtg actgtctctg atagtgaaac tacaatggta 300
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 ttgctcgatg cattgaagga gataccggaa caccggttga cattgatatc caaaccggat 420
 acttatgaaa ttacgggtac agtcccagaa tggtaa 456

<210> 1632
 <211> 579
 <212> DNA
 <213> B.fragilis

<400> 1632
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 aacgggatca cagcttttaa tggttcggca aacaacatat tgggagggaag agtctccggc 180
 ggcgtgtggt taaataagat catcggtctg cgcgtcgatg cagaagccgg caacgtatgg 240
 ctgaaaggcg gatacaatgc cgtgacagtt ggtgccggag cggatatcct ggtgaacctg 300
 atgaagaatt ataccgacga agacagaaaa ttccgggtga acgccatttt cggattaggg 360
 tacaactact attcgtttgg tgatgattat ccagactgt caaagacgaa taccatgagc 420
 ggtaacttct ctctgcaagc tgctttcagg ctgaattcgc atctgagcat ctttgctgaa 480
 ccgggaatca aaatcagtac caagtctat gacatcgaaa acaaagatga tgtgtttgpc 540
 ggcggaatga tgaccgtagg tgtgatatac aaattctaa 579

<210> 1633
 <211> 687
 <212> DNA
 <213> B.fragilis

<400> 1633
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gcctatcgcg	cgggacagag	aattttcgga	gaaagcaaag	tgcaggagat	gacaggcaag	180
tatgaaagcc	tgcccaaaga	cattgagtg	cattttatcg	ggcacttgca	gacaaacaag	240
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gcagaagtga	acaaacaagc	cataaaggca	gaaagagtta	ttcgctgttt	actgcaaata	360
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aatgccgccc	aatggaaagc	attggcaaac	atacacatat	gcggactgat	gggaatggct	480
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catgaagtga	aaaaacaata	ttttgccaac	gaaccgactt	tttgcgaaact	ttcaatggga	600
atgtcccatg	actatcatct	ggccattaaa	gagggcagta	cattggtaag	agtaggaagt	660
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<210> 1634

<211> 1044

<212> DNA

<213> B.fragilis

<400> 1634

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ctaaaatgta	tcgcagctat	tatgataacc	aactcacata	tggatattct	atatggagac	120
tatttctatc	tagccactgg	tggggcgata	ggtgatgcac	tgttcttttt	ttgctctggt	180
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ggattatatg	acaaacacat	ccatattatc	ccaatctttc	taaaactatt	gatatgtata	660
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agtgggctct	gcttggagat	atatttagta	caatacaact	tgttcactga	caaacttaat	900
aatattttcc	cattaaatct	attagtaata	ttttccacta	ttcttgttac	agcttacctt	960
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<210> 1635

<211> 951

<212> DNA

<213> B.fragilis

<400> 1635

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aatcgcggtg	gcgcaaaaag	agcggatgtc	attgcattgt	ccgatgcgtg	gcgtgcttcg	900
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<210> 1636
 <211> 903
 <212> DNA
 <213> B.fragilis

<400> 1636
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 actctgatgg cgggtgcaga cgatgtgccc acctggattg gtttcggcgg cagttatatt 180
 ggaggaatca tccgagggat catctcgatt atgattctga acaagacact tcagcagaca 240
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 accgggcgta cctattttgta tcacctgaag tcagatcttg cagaggctac gcatcaatta 840
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 tga 903

<210> 1637
 <211> 402
 <212> DNA
 <213> B.fragilis

<400> 1637
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 cagcttccta ttgatgcggc tacgggtgtg atgcctgatg gtgtggaggc gcaagccgc 180
 cagtcactcg agaataataa acatatacctt gaggetgccc gtctgacaat ggcagacatt 240
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 gcaacttatt ttgacgggtc atttcccgtc cgcttcggctg ttgccgtgaa agccttgcc 360
 aaagatgcct tagtcgagat cgagtgcacg gccgcacgat aa 402

<210> 1638
 <211> 885
 <212> DNA
 <213> B.fragilis

<400> 1638
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 gccggtacac tggaagtga cagcaacttg ctgcttattg aaaatggtaa agaaacagta 660
 cggttgatgt ccacataaa ggatggcagc ggtctgttgg ctctgacaa actgactatt 720
 acaggaaccg gagccaatgc ggccgacttt aaggtaagtgt gtgacagtaa gattatcgac 780
 ttgccggaag gtacatatat tatcaaagca gagggaagca agaaggaagt gattgtcgaa 840
 gtgaaaaaag atacggcaac tccccaggaa gaggtaacgg aataa 885

<210> 1639
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 1639
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 aaatatgctc ctgaagaaca gcttcctgca aagcagggtg cccaatcacc gggtcctatt 180
 cccggaaata ttgttgcaac cattacggcg gccgttaatg tggtagactca gggaaaaggg 240
 aaagtggcta aaatcgagaa aatctga 267

<210> 1640
 <211> 1179
 <212> DNA
 <213> B.fragilis

<400> 1640
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 gtagatatga gtaatcgcat actatacgaa gattccatag cagaattaaa tgtaatgact 1080
 gcatgtagtg aagtgaccaa caatcacttg agattatttg tcaacaactc aatagattac 1140
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<210> 1641
 <211> 576
 <212> DNA
 <213> B.fragilis

<400> 1641
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 aataaaaattc tattttttcta ccatttttttc cgttataaac gactaggttt caaactaaaa 240
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 tttggactcg gagccaaaat tttcggttcc attataatag gaaacaacgt taccatagga 480
 gcaaatgcag tggtcacaaa ggatattcca gataacgcca tagttggtgg gataccagca 540
 aaagtattaa gattcaaaga aataaatata ctataa 576

<210> 1642
 <211> 585

<212> DNA
<213> B.fragilis

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<400> 1642
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ggacaagctt ggtgtcagtg gcaacataag aacttcacat tatggaacat gtgtagttta 180
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tgtatagtag cgggtgtacc tgcaaaaatt ataaagaaaa tatga 585
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<210> 1643
<211> 1611
<212> DNA
<213> B.fragilis

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<400> 1643
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gccgatacat tggctttttt ggctttggga cgttcattgg ggacactctc tgttactcaa 480
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```

<210> 1644
<211> 678
<212> DNA
<213> B.fragilis

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aagttaaaga aaatattagt aggacaagct gaaatccgaa ttaaccggga ggcattaaga 180
gaactcgaca gagctttttc ttctccacga cgcttattta aatctcaatc tcgtttctgcc 240
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attttactaa	tcaaagattt	cctattgtac	agacctaacg	tctttacagg	taaataccat	300
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cacatgttgg	gcaataaaca	gttattttgt	aaatcccagt	tgatatagg	ggatccccga	420
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<210> 1645

<211> 2442

<212> DNA

<213> B.fragilis

<400> 1645

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tactctgcca	atatagcaca	atctatccgt	caacgtttat	cggtaactga	tccgtccgga	180
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cgtaaacggg	atatggctga	aaatgcggat	atggttttgt	tgttgaccga	ttcatcgaat	360
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<210> 1646

<211> 714

<212> DNA
 <213> B.fragilis

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 ttcaatgtag gagcggccgc aaagttgtgg aaacatctct cactgaacgt gtttaccgcg 660
 gaatttaaat gtatctccgg aggaatacga tatgaatgtg tcttaatcca ttaa 714

<210> 1647
 <211> 621
 <212> DNA
 <213> B.fragilis

<400> 1647
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 gtaggcgcag gcgcacccat gggctccggg agctccggtt cctcctccgg caccctcttc 420
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 tttggcaaaa ggcataaaac cccgaaagtt cttcaagatc tttcgggggt ttataccttt 540
 tatgggggtc ggaaatgtca tcagactcac ctttgtaaata caataccaca ttgggatata 600
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<210> 1648
 <211> 1230
 <212> DNA
 <213> B.fragilis

<400> 1648
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 atcactgaag gtgaattcag agacaaaata gaggcagtgc tccctaccct gcctcaaggg 180
 aaacacatgc acttttacta taatccggtt tcggaagaag tacggaagat gtgttggaat 240
 caaggagatt ggcgttttcta taaacactat aagaaatggc aatggaagac ttacgagatg 300
 gcacaggaaa taatagtcaa acaacatata gatattgtac accaattaaa tatgattggc 360
 tttagagaac ccgataacct ttggaaacta gataagccat ttgtttgggg accggtagat 420
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tttgcggaga	agataacata	tctgtttaac	catagagacg	tacttaagca	aatgtctgaa	1140
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<210> 1649

<211> 768

<212> DNA

<213> B.fragilis

<400> 1649

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aacctgctga	ttcacatgag	tcaccatata	ggacttcagg	cagatgtaga	gaagcaactt	720
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<210> 1650

<211> 1863

<212> DNA

<213> B.fragilis

<400> 1650

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gctatttctg caaatcccg tgatacgggt tctgaagatg atgtattaat gaagatagga 1860
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<210> 1651

<211> 798

<212> DNA

<213> B.fragilis

<400> 1651

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<210> 1652

<211> 849

<212> DNA

<213> B.fragilis

<400> 1652

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gagatacaga	atccttttgaa	ttttgtcatc	aatttcagta	aactgtccgg	tcaattgttg	180
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<210> 1653

<211> 1323

<212> DNA

<213> B.fragilis

<400> 1653

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atggccttgca	gtgatgcatg	tacacatgat	gctatcaaga	ttgtggaaaa	gaactgtatg	180
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agcaaata	tacaaagcga	tactcaagga	atatataaag	aagttataga	gagactaaaa	540
accggatatt	ggatattatt	ttcagggtgt	ccatgtcaaa	tagcaggatt	atatggcttt	600
ttaggtaaaa	agagggatag	tgaacggctt	ataacaattg	aggttgtatg	tcacgggtatt	660
gccagttatg	aagctcttga	tcttcattta	aaatactata	actcctcacg	tatatatcgt	720
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gcactctata	aattgggaac	aatatatctg	gttaagtacc	aaaagaaaca	attaatcagt	1260
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taa						1323

<210> 1654

<211> 999

<212> DNA

<213> B.fragilis

<400> 1654

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aaagaatata	tgttttatta	tcatcagata	agaatatata	tccgctcact	ctcttatacg	900
caacgaatga	cgcaccttca	aattgcacta	acatttccta	taatttatta	ctcactctat	960
ccactattgt	cgagattgaa	gaagatgtat	aagaattaa			999

<210> 1655

<211> 237

<212> DNA

<213> B.fragilis

<400> 1655

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ggagcattta	ttgagacatc	gatcttttgaa	ttattgacat	ccaatgcctt	gcagtgtcca	120
tcctgtcact	tgcgttttgaa	catagaccgc	atgaagtcca	aagcagcttt	tgacgcattg	180
cggaaagttc	agaatgcgca	ggagaatttg	gagagaaaaa	gcaagttcaa	cggttaa	237

<210> 1656

<211> 1218

<212> DNA

<213> B.fragilis

<400> 1656

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acacttactt	ccaaatacga	ctgttgcggg	tgtacagcct	gtacctccgc	ttgtaatagg	120
ggtgctatta	tcatgcagga	ggatgaacaa	ggattccctt	atccacatat	caacactaca	180
caatgcatcg	atttgtggcct	ttgtaataaa	gtttgccttg	tgttccgata	cgatgttata	240
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tggaatccct	cctctagtgg	tggtgtatct	gcctccctta	cagactatgc	ccttcggcaa	360
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tataggatca	cacatcaaga	tctcttgaaa	aatcgctttt	atatgatttt	actaactctc	1200
aaaaaacggt	ttacatga					1218

<210> 1657

<211> 924

<212> DNA

<213> B.fragilis

<400> 1657

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cgtctgagga	atccatcata	ctatccggaa	ggaagtgtat	atctggctga	atatatccgt	180
aatcataaat	tgacagaata	tctggaactg	attaaagaaa	gcaagaagat	atgcaccatt	240
cctgttattg	caagtataaa	ctgctataacc	gacgctgaat	gggtagactt	tgcaaagcaa	300
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caatataaat	acggctcatt	tgaacaacgt	cacatcgata	ttctgagcca	cataaagaaa	420
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gcacgcggca	tcgaaatatg	tagtgccatc	taccagaaca	ccaatctgtt	tgtaggagaa	780
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aaaggttaagc	tgaacgctaa	agatgtggaa	ggcatcaata	tgtttgaacg	taccagtttc	900
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<210> 1658

<211> 186

<212> DNA

<213> B.fragilis

<400> 1658

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atatgggttac	ttgtttatct	attgtatgaa	agtaaggaaa	tgcaatacat	gattgattat	180
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<210> 1659

<211> 363

<212> DNA

<213> B.fragilis

<400> 1659

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tatccgcttc	atcttaattc	acctaactaa	gggtatatcc	gtgcagaagg	ttgcatcctg	300
ttttattatg	acagtttgaa	atgtgtttta	tacttctctc	ccggagggtga	ttatacacia	360
taa						363

<210> 1660

<211> 195

<212> DNA

<213> B.fragilis

<400> 1660

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gaaatcacta	tttga					195

<210> 1661

<211> 1116

<212> DNA

<213> B.fragilis

<400> 1661

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gactgggaac	ttattttaat	agatgatggg	agtacagaca	acacatggga	tatttgcaat	180
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<210> 1662

<211> 1398

<212> DNA

<213> B.fragilis

<400> 1662

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gactacaatt	gcctgaagaa	ttttcaggag	aatgatattt	atcttccgat	tgttggtttg	180
gaagaattgg	ataagttcaa	gaagggaat	gaacaaatca	attacaatgc	acgtgagttt	240
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<210> 1663

<211> 210

<212> DNA

<213> B.fragilis

<400> 1663

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ctgggacca	ttataaaca	cctctcttct	gacaatcgct	gttggcattt	atcacacaat	180
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<210> 1664

<211> 507

<212> DNA

<213> B.fragilis

<400> 1664

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<210> 1665

<211> 645

<212> DNA

<213> B.fragilis

<400> 1665

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gaacgcgcag	aaaaatggct	taaagaaaat	aagtatacca	ctcccatatt	gaaatgggaa	600
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<210> 1666

<211> 636

<212> DNA

<213> B.fragilis

<400> 1666

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gagcggattg	tcaatttagc	tgtcactcat	gtgccttctg	ctttcaactc	tcaatcgact	180
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<210> 1667

<211> 1221

<212> DNA

<213> B.fragilis

<400> 1667

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<210> 1668

<211> 2145

<212> DNA

<213> B.fragilis

<400> 1668

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<210> 1669

<211> 480

<212> DNA

<213> B.fragilis

<400> 1669

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<210> 1670

<211> 333

<212> DNA

<213> B.fragilis

<400> 1670

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<210> 1671

<211> 903

<212> DNA

<213> B.fragilis

<400> 1671

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<210> 1672

<211> 903

<212> DNA

<213> B.fragilis

<400> 1672

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<210> 1673

<211> 507

<212> DNA

<213> B.fragilis

<400> 1673

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<210> 1674

<211> 3069

<212> DNA

<213> B.fragilis

<400> 1674

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<211> 1167

<212> DNA

<213> B.fragilis

<400> 1675

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<210> 1676

<211> 1251

<212> DNA

<213> B.fragilis

<400> 1676

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<210> 1677

<211> 1284

<212> DNA

<213> B.fragilis

<400> 1677

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<210> 1678

<211> 2514

<212> DNA

<213> B.fragilis

<400> 1678

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<210> 1679

<211> 312

<212> DNA

<213> B.fragilis

<400> 1679

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<210> 1680

<211> 843

<212> DNA

<213> B.fragilis

<400> 1680

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<210> 1681

<211> 5856
 <212> DNA
 <213> B.fragilis

<400> 1681

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<210> 1682

<211> 1353

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1196), (1224)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 1682

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<210> 1683

<211> 1437

<212> DNA

<213> B.fragilis

<400> 1683

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<210> 1684

<211> 1008

<212> DNA

<213> B.fragilis

<400> 1684

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<210> 1685

<211> 1128

<212> DNA

<213> B.fragilis

<400> 1685

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<210> 1686

<211> 1284

<212> DNA

<213> B.fragilis

<400> 1686

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<210> 1687

<211> 186

<212> DNA

<213> B.fragilis

<400> 1687

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<210> 1688

<211> 255

<212> DNA

<213> B.fragilis

<400> 1688

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<210> 1689

<211> 345

<212> DNA

<213> B.fragilis

<400> 1689

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<210> 1690

<211> 201

<212> DNA

<213> B.fragilis

<400> 1690

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<210> 1691
 <211> 1599
 <212> DNA
 <213> B.fragilis

<400> 1691
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<210> 1692
 <211> 2358
 <212> DNA
 <213> B.fragilis

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<210> 1693

<211> 417

<212> DNA

<213> B.fragilis

<400> 1693

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<210> 1694

<211> 402

<212> DNA

<213> B.fragilis

<400> 1694

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<210> 1695

<211> 525

<212> DNA

<213> B.fragilis

<400> 1695

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gacaactcct	acgagctgga	atttgacttc	aacaaccgta	acgtgaagga	tgacggggct	480
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<210> 1696

<211> 453

<212> DNA

<213> B.fragilis

<400> 1696

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<210> 1697

<211> 1302

<212> DNA

<213> B.fragilis

<400> 1697

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aatagagaaa	gacatttttt	caacgataat	tatgtattag	ataatgctct	atgggggtaca	180
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acatgccaga	tttttataga	gcaacgtcag	caaactatag	atttaaacga	agagcaaaaa	300
aggataacgt	caaattctca	aaagtcacaa	ataaatcaat	ctgaaataca	gcgattcaat	360
tgcctatttt	ttgagcttat	agatttgcac	aggacgcagg	tggattattt	gatgaagatg	420
ccttttagttg	gttttgaagc	agaaaactca	aaagaaacaa	acttttttga	tagattttatg	480
gaagagttgc	atagcaactc	gaatgtaa	agtagctatg	caagagcatt	tattgttgcc	540
aagaggaaat	atctccaact	atatttgagc	aacagtacta	ttttagcacc	atatttttaga	600
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tctgttacta	aaattgtatg	ttggattttta	aatacagaaa	ataagctgtt	aagggtatct	1260
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<210> 1698

<211> 1161

<212> DNA

<213> B.fragilis

<400> 1698

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cttgagaaac	gcccattggac	tggcggtaat	atattattgtg	aaaatatcaa	tgagatacat	180
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<210> 1699

<211> 741

<212> DNA

<213> B.fragilis

<400> 1699

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gtccgcttcc	ttaaaggcat	tgccggactg	tggaggctgc	tggacggcat	ggcggcaaag	180
caggaaacgg	tacggggaggc	atctcccgca	gaaacatcgg	acatcatcgg	caagagccgt	240
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gaagtccggc	tgaagaaacc	gaaaaaggaa	tttaccgtac	ccgacaacat	tgacgagttc	720
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<210> 1700

<211> 252

<212> DNA

<213> B.fragilis

<400> 1700

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ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 1701

<211> 1359

<212> DNA

<213> B.fragilis

<400> 1701

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<210> 1702

<211> 1302

<212> DNA

<213> B.fragilis

<400> 1702

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ggcggatttt	atatgggaga	tccttcgcgc	aatgtatata	gtgttgatct	gaaggaattt	1260
gataaaacag	aagtcgatta	ttattataac	aatgtaagat	ga		1302

<210> 1703

<211> 258

<212> DNA

<213> B.fragilis

<400> 1703

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tcttatttcag	ccgatgtctg	ttttttctta	ttaaagcaag	caaaaaggac	aataatcaac	240
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<210> 1704

<211> 234

<212> DNA

<213> B.fragilis

<400> 1704

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atatacagat	acttatatgg	gtctatagac	aacatacaac	tatctatgac	tggtatcgca	180
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<210> 1705

<211> 2826

<212> DNA

<213> B.fragilis

<400> 1705

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<210> 1706

<211> 441

<212> DNA

<213> B.fragilis

<400> 1706

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atgttcgaga	agtcggggcg	ttacgccaaa	tcagtttttc	tgaaggcgca	cttcttcgga	180
cagccgttca	aggtgctgaa	agtggaacaag	acgctgggtg	attactacac	caaactgtcc	240
gattttcatg	cgcagttccg	cgcgataggt	acaaattaca	accaagttgt	gaagggaactg	300
aggctgcatt	tttccgagaa	aaaggcgatg	gcgttgcttt	acaagctgga	acaacagacc	360
gtagaacttg	tgaactgag	ccgtaaaatt	gtggaacttt	caagagaaat	gcaggaaaaa	420
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<210> 1707

<211> 285

<212> DNA

<213> B.fragilis

<400> 1707

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gcgatggcta	atgtggaagc	attggctgat	attaatgaaa	cagattcttc	tgggcaaaaca	180
ttatattgtt	gcggtaatga	agatacatgc	gctaaaggag	aagatgagga	tactggcgaa	240
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<210> 1708

<211> 942

<212> DNA

<213> B.fragilis

<400> 1708

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<210> 1709

<211> 597

<212> DNA

<213> B.fragilis

<400> 1709

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<210> 1710

<211> 810

<212> DNA

<213> B.fragilis

<400> 1710

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<210> 1711

<211> 243

<212> DNA

<213> B.fragilis

<400> 1711

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gcttttaggaa	tggaagaaac	cgatggggct	aaagactatt	ggtgttgggt	aaatgaggat	180
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<210> 1712

<211> 900

<212> DNA

<213> B.fragilis

<400> 1712

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<210> 1713
<211> 306
<212> DNA
<213> B.fragilis
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<210> 1714
<211> 1914
<212> DNA
<213> B.fragilis
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<400> 1714						
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ctggaaacat	gggtgacaaa	gtccgttaaa	gaaggaaaaa	tttcggtaga	agaaggtaaa	1860
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<210> 1715

<211> 1467

<212> DNA

<213> B.fragilis

<400> 1715

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gatgggcttt	atgatgtgct	tggttatgga	tatgatatta	caaaggagta	tttgcaccct	180
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<210> 1716

<211> 1053

<212> DNA

<213> B.fragilis

<400> 1716

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<210> 1717

<211> 624

<212> DNA

<213> B.fragilis

<400> 1717

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atcggcagcc	cggacacgaa	ccggaccatc	atcgcattgg	cttacatcga	aatcgagtta	180
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<210> 1718

<211> 792

<212> DNA

<213> B.fragilis

<400> 1718

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<210> 1719

<211> 1518

<212> DNA

<213> B.fragilis

<400> 1719

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<210> 1720

<211> 522

<212> DNA

<213> B.fragilis

<400> 1720

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tcttctgcgt	tgatgatgtt	gtctgaaggt	ataaataaat	cgcaggatca	ggtcgtaaga	480
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<210> 1721

<211> 411

<212> DNA

<213> B.fragilis

<400> 1721

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<210> 1722

<211> 1800

<212> DNA

<213> B.fragilis

<400> 1722

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<210> 1723

<211> 1470

<212> DNA

<213> B.fragilis

<400> 1723

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 <211> 1032
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 <213> B.fragilis

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<210> 1725
 <211> 1977
 <212> DNA
 <213> B.fragilis

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<210> 1726

<211> 2112

<212> DNA

<213> B.fragilis

<400> 1726

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<210> 1727

<211> 750

<212> DNA

<213> B.fragilis

<400> 1727

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<210> 1728

<211> 702

<212> DNA

<213> B.fragilis

<400> 1728

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<210> 1729

<211> 1800

<212> DNA

<213> B.fragilis

<400> 1729

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<210> 1730

<211> 630

<212> DNA

<213> B.fragilis

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<210> 1731

<211> 1839

<212> DNA

<213> B.fragilis

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<210> 1732

<211> 408

<212> DNA

<213> B.fragilis

<400> 1732

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<210> 1733

<211> 360

<212> DNA

<213> B.fragilis

<400> 1733

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<210> 1734

<211> 1425

<212> DNA

<213> B.fragilis

<400> 1734

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<210> 1735

<211> 354

<212> DNA

<213> B.fragilis

<400> 1735

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<210> 1736

<211> 1230

<212> DNA

<213> B.fragilis

<400> 1736

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<210> 1737

<211> 891

<212> DNA

<213> B.fragilis

<400> 1737

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<210> 1738

<211> 534

<212> DNA

<213> B.fragilis

<400> 1738

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<210> 1739

<211> 801

<212> DNA

<213> B.fragilis

<400> 1739

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<210> 1740

<211> 207

<212> DNA

<213> B.fragilis

<400> 1740

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<210> 1741

<211> 2424

<212> DNA

<213> B.fragilis

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<211> 225

<212> DNA

<213> B.fragilis

<400> 1742

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<210> 1743

<211> 1962

<212> DNA

<213> B.fragilis

<400> 1743

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<210> 1744

<211> 543

<212> DNA

<213> B.fragilis

<400> 1744

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gagagctata aagaaatagc aaaaatcttg aatctgacag aggaacaggt aaaagtgaat 480
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<210> 1745

<211> 300

<212> DNA

<213> B.fragilis

<400> 1745
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<210> 1746
 <211> 597
 <212> DNA
 <213> B.fragilis

<400> 1746
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<210> 1747
 <211> 819
 <212> DNA
 <213> B.fragilis

<400> 1747
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<210> 1748
 <211> 351
 <212> DNA
 <213> B.fragilis

<400> 1748
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 aaggactatg acgggctttt catccgtgaa cccgaagtaa aggcacgcga ggggaagatg 180
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<210> 1749

<211> 1884
 <212> DNA
 <213> B.fragilis

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<210> 1750
 <211> 483
 <212> DNA
 <213> B.fragilis

<400> 1750
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 gacatcgccg gacgggaaat ctcggtaggg ggctacgtgg acaccgtgct gcgccaacat 420
 ctggaacagc acaaggagaa aataaacgaa ctgtacaaga accaacgtga agacttaata 480
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<210> 1751
 <211> 1320
 <212> DNA
 <213> B.fragilis

<400> 1751

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<210> 1752

<211> 540

<212> DNA

<213> B.fragilis

<400> 1752

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gaaatacag	aagttccaaa	cgggtatcgg	cagacgcaag	cggacacttg	tgcaatacga	180
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agcagtcggg	ttaccgccat	tgacacccac	acggcagtc	taacgagcga	gtacaatatg	480
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<210> 1753

<211> 459

<212> DNA

<213> B.fragilis

<400> 1753

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gagtgcaga	cgaaagacat	cgaaacgcac	gagaggatat	attgtgatat	gctggaagaa	420
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<210> 1754

<211> 1293

<212> DNA

<213> B.fragilis

<400> 1754

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<210> 1755

<211> 282

<212> DNA

<213> B.fragilis

<400> 1755

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gaggagcagt	taagggcggg	tgtaaaagac	ttttccgaga	agcacgaact	tgacaagttc	180
ttccttttacg	gcttcggctc	acaccatttc	tacctgcacc	aacgctatac	gagtaacccc	240
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<210> 1756

<211> 699

<212> DNA

<213> B.fragilis

<400> 1756

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<210> 1757

<211> 1104

<212> DNA

<213> B.fragilis

<400> 1757

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<210> 1758

<211> 573

<212> DNA

<213> B.fragilis

<400> 1758

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<210> 1759

<211> 1278

<212> DNA

<213> B.fragilis

<400> 1759

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<210> 1760

<211> 270

<212> DNA

<213> B.fragilis

<400> 1760

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tctaaagaac	ctgtcaaac	tggggagctc	ttaagaataa	ctgtgatcta	taaagcggat	180
catccggaac	actttaggaa	aactattaca	atatattgta	atgttctctac	ttctcctctg	240
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<210> 1761

<211> 936

<212> DNA

<213> B.fragilis

<400> 1761

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<210> 1762

<211> 192

<212> DNA

<213> B.fragilis

<400> 1762

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<210> 1763

<211> 489

<212> DNA

<213> B.fragilis

<400> 1763

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<210> 1764

<211> 1371

<212> DNA

<213> B.fragilis

<400> 1764

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<210> 1765

<211> 2664

<212> DNA

<213> B.fragilis

<400> 1765

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<210> 1766

<211> 189

<212> DNA

<213> B.fragilis

<400> 1766

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<210> 1767

<211> 195

<212> DNA

<213> B.fragilis

<400> 1767

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<210> 1768

<211> 1317
 <212> DNA
 <213> B.fragilis

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<210> 1769
 <211> 381
 <212> DNA
 <213> B.fragilis

<400> 1769
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<210> 1770
 <211> 249
 <212> DNA
 <213> B.fragilis

<400> 1770
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 <212> DNA
 <213> B.fragilis

<400> 1771

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<210> 1772

<211> 1176

<212> DNA

<213> B.fragilis

<400> 1772

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tattatatta	ctatagataa	aacattacaa	agaatgtacg	cagtgggtgag	aaagccagat	1140
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<210> 1773

<211> 624

<212> DNA

<213> B.fragilis

<400> 1773

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gctgcggagt	ccatcttgga	tttgcgtcgt	aaatatcaga	tagactttat	tgtgctggcc	300
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attcaccctg	cactttttacc	taaattttggc	ggaaaaggga	tgtatggtga	ccgggtacat	420
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<210> 1774

<211> 243

<212> DNA

<213> B.fragilis

<400> 1774

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gatgtcctcg	tgcttgaaaa	cagagatacgg	ctgggttgccg	aagcccatct	tctccagata	180
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<210> 1775

<211> 336

<212> DNA

<213> B.fragilis

<400> 1775

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<210> 1776

<211> 206

<212> DNA

<213> B.fragilis

<400> 1776

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tattcacctt	ttatgtattc	atcagcatat	tgcttggaact	tttggctgta	ttggccggag	180
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<210> 1777

<211> 654

<212> DNA

<213> B.fragilis

<400> 1777

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<210> 1778
 <211> 1797
 <212> DNA
 <213> B.fragilis

<400> 1778
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<210> 1779
 <211> 291
 <212> DNA
 <213> B.fragilis

<400> 1779
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 cggcaaataa aattttttta atcaaaatca ctacaaatct atgacaattt acttaaactt 180
 ccaatttttc gggaggcaga atacattttc gctcttgaaa aaaatacctt tgtgtatgaa 240
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<210> 1780
 <211> 414
 <212> DNA
 <213> B.fragilis

<400> 1780
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atcaaaaagta	accagaaaaga	gatcagtcag	gttctgaacc	aattgtttgc	cggaacgaat	360
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<210> 1781

<211> 1221

<212> DNA

<213> B.fragilis

<400> 1781

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<210> 1782

<211> 282

<212> DNA

<213> B.fragilis

<400> 1782

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atcgtgaaga	atctcgaacg	gaaaaaatat	gtcccatgtc	agactatccg	acacccgggt	180
gtcagatata	gtatgtactc	gccaaatgta	cgtaaagata	aggagatctg	caacgaaact	240
aagaactgtt	tcgtcctttc	aatgcaggag	gaaaggaagt	aa		282

<210> 1783

<211> 639

<212> DNA

<213> B.fragilis

<400> 1783

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gaactcaacc	gctttcagaa	tctgacatac	aatgaaatag	ccgaacgact	gggagtgtct	540
cccaaaacaa	tcgattaccg	gattcaacag	gccttaaaac	agttgcgcac	cgacctgaag	600
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<210> 1784

<211> 200

<212> DNA

<213> B.fragilis

<400> 1784

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aatcagttta	cagcccaatc	ttcattgaaa	acagcaagtg	gtaaaactct	tttcggcgga	180
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<210> 1785

<211> 390

<212> DNA

<213> B.fragilis

<400> 1785

ctcttcagat	tatgtttgtac	tttcatgcaa	atgaaaaaaa	gcaatattta	cataggtgaa	60
attatcaaaa	atgtgatgtc	tgagagacag	gttacaaaag	ccgaactcgc	aagacggttg	120
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gaactgttgg	atggaggggc	taataaatag				390

<210> 1786

<211> 234

<212> DNA

<213> B.fragilis

<400> 1786

cacaggaaaa	catctcctat	acttccgacc	aaggcaagac	cctatgattt	caatactgca	60
gacaaactca	acacattgct	tataaacgct	ttggttttcta	caggcgagtt	gaaggaaatt	120
gaggaatacg	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatggcaaa	180
accgacctac	aaaaagttcc	tccgctacag	gcctggcgta	tatgttatcg	gtga	234

<210> 1787

<211> 348

<212> DNA

<213> B.fragilis

<400> 1787

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<210> 1788

<211> 252

<212> DNA

<213> B.fragilis

<400> 1788

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gtgttgcaaa	aagaaaacaa	gcaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 1789

<211> 2178

<212> DNA

<213> B.fragilis

<400> 1789

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<210> 1790

<211> 342

<212> DNA

<213> B.fragilis

<400> 1790

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gacaagaatg	tctatatcga	gaacagcgaa	ggtaaccgga	thgtgcgthth	tcattcggcc	180

gacacccata	agaaaaatctt	cgctcttctg	gaatcccaga	acaatccggt	aaaacgcttc	240
aggggggaaac	gggggttccc	gcttcaaagg	aaaatctcag	tgaaaaaaaag	aaaactttgc	300
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<210> 1791

<211> 1887

<212> DNA

<213> B.fragilis

<400> 1791

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<210> 1792

<211> 1068

<212> DNA

<213> B.fragilis

<400> 1792

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<210> 1793

<211> 1038

<212> DNA

<213> B.fragilis

<400> 1793

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<210> 1794

<211> 714

<212> DNA

<213> B.fragilis

<400> 1794

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<210> 1795

<211> 1221

<212> DNA

<213> B.fragilis

<400> 1795

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<210> 1796

<211> 648

<212> DNA

<213> B.fragilis

<400> 1796

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<210> 1797

<211> 738

<212> DNA

<213> B.fragilis

<400> 1797

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 <211> 1092
 <212> DNA
 <213> B.fragilis

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 <211> 549
 <212> DNA
 <213> B.fragilis

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<210> 1800
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 <212> DNA
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<210> 1802

<211> 2886

<212> DNA

<213> B.fragilis

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<210> 1803

<211> 597

<212> DNA

<213> B.fragilis

<400> 1803

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gagatagccg	atatgctggg	tatcaaagag	cattcatcca	cttcgcagtt	gcaccgggcc	540
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<210> 1804

<211> 588

<212> DNA

<213> B.fragilis

<400> 1804

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tgtatgactg	aattactaat	ccgcgaacct	aagtattggt	ttgccaaagt	cactatttat	540
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<210> 1805

<211> 486

<212> DNA

<213> B.fragilis

<400> 1805

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caagaagcac	atcaataat	ggatagctgg	aaaaataggg	cactttcaga	agaagaattg	420
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<210> 1806

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tgttttaaaa	atatacaagt	taatgatcct	ttaaaaagg	aatatggggt	cgtatacgat	1260
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<210> 1810

<211> 1029

<212> DNA

<213> B.fragilis

<400> 1810

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catctgaacc	gacacaacgt	attgctgaca	cagggagtgg	atgccgtctg	catctttgtc	180
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gtaacctccc	atcaggcctt	ctttaccctg	gaagcgctgg	ccaacatcgc	agcaacgact	960
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<210> 1811

<211> 315

<212> DNA

<213> B.fragilis

<400> 1811

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cataatatag	aaaataaaaa	agaagcagct	acaatcgaat	acttcccata	tttaaacatt	180
ataagcgcta	caaatgctat	aaaagcacct	ccttccttgg	gattagaaaa	taaaccattc	240
ctatatatta	aattattaat	gccaatagca	tcttctgaca	actttacaac	atattttaaa	300
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<210> 1812

<211> 993

<212> DNA

<213> B.fragilis

<400> 1812

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tggaagcttg	cttcggctgt	cagtaatgcc	ggtggtctgg	gactgatagg	ctccggttcg	180
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gaggaaggag	tcaaaaatcgt	atttacctcc	gccggaaaac	cgaaaacgtg	gaccggatgg	360

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ttccgccgta	gacaaagtgt	ggacgaagtg	atgaaagaac	ttttagaagg	ataccggagg	960
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<210> 1813

<211> 663

<212> DNA

<213> B.fragilis

<400> 1813

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aagcatgcac	acgaagtgga	gttggcccg	ggaatagccg	aaagggcagg	agtgggaattt	180
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tgtccggcat	gtaagttacg	caagcaggga	ctggaagagt	atttaagtaa	aagaaaccgt	660
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<210> 1814

<211> 1161

<212> DNA

<213> B.fragilis

<400> 1814

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aatacaaaata	cgcaatatat	tattgtttta	ttttcttttt	attattttatt	ttctattttg	180
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ggaataacaa	gtgggggtctt	attttggctg	ttaatttttc	aagaattaaa	agaaagtaaa	1140
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<210> 1815

<211> 1056
 <212> DNA
 <213> B.fragilis

<400> 1815

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<210> 1816
 <211> 1167
 <212> DNA
 <213> B.fragilis

<400> 1816

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<210> 1817
 <211> 1329
 <212> DNA
 <213> B.fragilis

<400> 1817

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cgatgttgg	tatatgacaa	ttttgtttt	gatatattaa	ggtataagcc	taagatgctt	180
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<210> 1818

<211> 603

<212> DNA

<213> B.fragilis

<400> 1818

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taa						603

<210> 1819

<211> 1296

<212> DNA

<213> B.fragilis

<400> 1819

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<210> 1820

<211> 1032

<212> DNA

<213> B.fragilis

<400> 1820

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gggattgtaa	cggatggtga	tataaggaag	gctatattat	atggagaatt	aagtatagag	180
aaaattatta	acaagagacc	tgtcaccttt	caatatgggt	caaatcaacg	ctcaattatc	240
aataaattac	tggaaataaa	gtcatctctt	attccattaa	tagaaaaaga	tggaacattt	300
gtagattttt	atttcttggg	gaataattat	aaacttata	attctacaaa	agtcgtaatt	360
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gcaggggaaa	aatggaatgt	taatattgag	tacgtaaaag	aaaataaaaag	attgggtact	600
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gacttaccta	tgctatttaa	agaccttaaa	gaaaagagta	tgttgataaa	ggggtatatg	960
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<210> 1821

<211> 846

<212> DNA

<213> B.fragilis

<400> 1821

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aatgatggat	ttgaggttgg	agagtttgaa	aattttattat	gtaattttaa	tgttgtagag	180
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gcgggttata	aatatttaat	tctatgtgat	gtagatgact	ttttttcaag	aaaaagggtg	300
gaaatttcct	taaataatgct	gcgtgaattt	gatgttggtg	ttaatgatgt	tgatatcggt	360
tcaaatagaa	atgaaatatt	aataaataat	tattttttcga	ggagtttgaa	ttcttcaaca	420
aacattgatt	tacattttat	aaaagaaaag	aatctattag	gattttccaa	tacagctata	480
aaaacagact	tgtttgatag	tattaatttt	cctaccaatt	tagagatcgt	tgattgggat	540
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tataaatcac	tttatattca	atatctagat	atgaaacgaa	agtctgatat	ggatattatt	780
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ctataa						846

<210> 1822

<211> 717

<210>	1824
<211>	459

<212> DNA
<213> B.fragilis

<400> 1824
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ctttatctgt tcagtttccg caatcacggt gcctttcacg aagactgcgt aaacataatc 300
atgaaagatc tgatccgcct gatggatcct aaatacattg aagtgaccgg catcttcacc 360
cctcgtggcg gcatttcgat ttatccgtat gcccaattacg gtcgtccggg gacgaaatac 420
gaagagatgg caaccacccg gttgatgaat catgaatag 459

<210> 1825
<211> 504
<212> DNA
<213> B.fragilis

<400> 1825
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gctataaaaa atggcccaaa atctcacatt ggaagacatt tgatgacctc atttctttca 180
atgaagggcc taacggagtt gactaatggt gtgggaaatt ggagcgataa gcgtgcttct 240
gccgtggcca ggacaacgta tactcatcag ataacagcaa tacctgatca ctacttcgca 300
ctagtttctc ggtactatgc atatgatcca atatcaaagg aaatgatagc attgaaggat 360
gagactaatc caattgagga gtggcagcat atagaacagc taaagggtag tgctgaagga 420
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tcctacataa atagacgcat ataa 504

<210> 1826
<211> 504
<212> DNA
<213> B.fragilis

<400> 1826
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gctataaaaa atggcccaaa atctcacatt ggaagacatt tgatgacctc atttctttca 180
atgaagggcc taacggagtt gactaatggt gtgggaaatt ggagcgataa gcgtgcttct 240
gccgtggcca ggacaacgta tactcatcag ataacagcaa tacctgatca ctacttcgca 300
ctagtttctc ggtactatgc atatgatcca atatcaaagg aaatgatagc attgaaggat 360
gagactaatc caattgagga gtggcagcat atagaacagc taaagggtag tgctgaagga 420
agcatacgat accccgcgat gaatgggata atatcacagg aggtactaga ctacctttca 480
tcctacataa atagacgcat ataa 504

<210> 1827
<211> 1302
<212> DNA
<213> B.fragilis

<400> 1827
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atcaacgaag tcgttgatcc gttacgttcc gggtggatca catccggctc gaaagtgaag 180
gctttggagg aagaaattaa atctttctca ggagcaaaa aagtgccttg tgtcaattcc 240
tggacatcag gagctattat gatgttgcgt tggctgggag tgaaggaggg cgatgaagtg 300
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ccggtaatgg tggattccgg aactgatttt aatatctcgg tggaggctgt tcgtaaagct 420
attactocta aaacaaaggc gattataccc gtagatattg ctgggttttc ctgcgattat 480

gaaagaatca	tggcactggg	gcaggaacca	gaaatggtaa	aactgttccg	ttcggaatct	540
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gcacgttaca	gtaaccgtca	gcgtaccggg	tgtgaaactg	atgtggctat	cttttcactt	660
catgccgtga	aaaatgtgac	tactgccgaa	gggtggggcca	tttgcctgaa	tctgcctaag	720
ccgttcgata	atacggagtt	gtataaagag	ctacggatga	caagcttgaa	ctgccagacc	780
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ccggaattgc	tgaagaacg	aaagcgggtg	tttaatgctt	atagcgatgc	tttttcgggt	960
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atatcattgc	cgatatatcc	ccaattggat	agtgaaaaat	tgaatttcat	tattgaaact	1260
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<210> 1828

<211> 1446

<212> DNA

<213> B.fragilis

<400> 1828

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tctaggaggt	tgtctacaga	agaatatggg	ataatacaat	tatctactgg	aattggcctg	180
tttttgccta	tgggtcttttc	ttgcgggaatt	gatagggcta	tatatcgctt	tttcaatgag	240
tgtagaaccc	acaaagcaaa	gaaagagtta	atatctactg	tatatgggtt	tgttgttatt	300
gttggtatgg	tctttttgac	aatctttggt	ttatcttctt	cattatgggt	taaatctggt	360
gtccatattt	caccatatcc	ttatgtctta	ttatttgcac	atccttattt	atttgcagag	420
ctgtctacga	taggtcaatc	ttattttcag	caagtctttg	atttaaaaag	aatgactata	480
atagaagtta	taggaactgc	tattaatctg	ttattatcta	tatatattgt	tgtaaacttg	540
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<210> 1829

<211> 741

<212> DNA

<213> B.fragilis

<400> 1829

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actgtcattg	aggacaatcg	cggtaatagg	aaaactatca	agaaagacat	ttttggagat	420
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actgtcattg	agaacaattg	cggtaatagg	aaaaccatta	agaaagacat	ctttggagat	540
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actgtcattg	aaaataataa	aggttataaa	aagaccatta	agacagatat	attcggtaat	660
aaaataatcg	aagataatca	tgggaaaaag	caaattatta	aaaaagatat	attcgggaat	720
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<210> 1830

<211> 711

<212> DNA

<213> B.fragilis

<400> 1830

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agtgtggaag	atattgattg	tgctgtagaa	ttatttataa	aaaagaatgc	ggactctgtg	420
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agactaatta	atattttcga	tgataaaaatt	gtaaatcgtc	aggaattaag	aactacttat	540
tatcctaattg	gagccattta	tatcttttaa	agtagtttaa	ttagaaataa	gaaatattat	600
acagacaatt	cttttgctta	tgcatgcct	agagatagat	ccgtagatat	tgattttttg	660
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<210> 1831

<211> 189

<212> DNA

<213> B.fragilis

<400> 1831

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aacgatttgt	tttctgagca	aaaagaatat	ccgaatgctt	atccgtgtgc	tataatgggt	180
gacggataa						189

<210> 1832

<211> 819

<212> DNA

<213> B.fragilis

<400> 1832

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aaccacgtct	ccgggtgtaa	gggctttggc	tatcagttcg	ccttccttct	ctttctgttg	180
ctcgggtgtc	aggcttttcg	tatttttcaa	ttctggaatc	acctccatat	cgaagaaat	240
gaagtgtttg	gtacgctcta	tgtaatcggt	gattgcagtg	atataatgct	gctctacagt	300
ccgtcctacg	acgataaggg	ttgttttcat	tcaagtgcaa	actcttgttt	attgcacaaa	360
aataagaaaa	aaatattggt	tttagcatta	aatacttacc	tttgcgatc	gataataact	420
gtgattatga	aaaaacgggt	acttttatgg	atggccggac	tcgtattcgc	tgtaacttcg	480
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accactgcc	acggcaattt	ccggataaac	tgcttcttcc	gcagagtaca	gaacaaatat	780
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<210> 1833
 <211> 519
 <212> DNA
 <213> B.fragilis

<400> 1833
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 gccgttcccg aagacctgaa gaagcctttt atgatgttcg tggccgggtt caagtatcgt 420
 gagatagccg agaagatgga tttaccggta gggactatca agagccgtct gttcctgatc 480
 cgtaaaagat tgcagcagga tttgaaagat ttctcgtaa 519

<210> 1834
 <211> 1059
 <212> DNA
 <213> B.fragilis

<400> 1834
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 gaagaaacctt cggataaggg cagtacttct ccccaagagc cggtttacac cacctttaca 180
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<210> 1835
 <211> 852
 <212> DNA
 <213> B.fragilis

<400> 1835
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gatttaatga ccattttttac aaaggacttc tgggacaaga agggacgcaa ccggagatcg 780
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<210> 1836

<211> 645

<212> DNA

<213> B.fragilis

<400> 1836

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aatgtagggc	attccatctt	aggctatcct	gttctcggta	ctgatgacga	tattccctta	180
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gattgcaaag	tgggtgattg	ttctttttta	ggtagccagt	cggtaatggt	gaatggtaca	540
tccatcattt	ccggttgtat	catcggcgcg	ggttcggtag	tacgtaagga	tattttggaa	600
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<210> 1837

<211> 207

<212> DNA

<213> B.fragilis

<400> 1837

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acctatataa	agggaaactca	cggttccgga	gctgccaaaga	tgaaagctga	gatccggaga	180
aagagggcga	acagacataa	acggtaa				207

<210> 1838

<211> 1332

<212> DNA

<213> B.fragilis

<400> 1838

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aatattgagt	tggaaaccgac	ttttgctaac	ttacaaaaat	tacgtcatag	agaaattttt	180
ttgaatggat	tagaggataa	aattgtagaa	tttctagatc	cttcaactaca	aaattacaat	240
gatagttggg	ataaaataga	tttgatgtta	tcgaaaattt	tatcaaataga	tttttagattc	300
aaattttgtg	attcttttag	tgggtggatgg	gtttataact	ggttttgttt	ggatcatggt	360
ggctatgatt	ataaccctag	aagacgcgat	atgggatatc	ataatatata	tgatcgttac	420
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ccacaacctt	atttggaat	aaagactaaa	tctggtaaat	atattcatga	taattttgat	1200

tttggtttgg	atggtaaatac	ttgggtcatat	gtttttgatg	aaaatatgat	taagtttgaa	1260
gatgttgata	cgattgggtg	agcagctaata	gatatgtgtg	gacaagttag	cctcaaatgt	1320
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<210> 1839

<211> 936

<212> DNA

<213> B.fragilis

<400> 1839

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ttctatattt	tccgtggaca	aagatactct	ttttctgtga	attccctatc	tttgcccgct	180
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atgcaatata	aagatattca	aggcgatccc	ttcgactggc	tgtatatcga	cttcagacc	840
ctcagcgctt	atgctgccga	caatggcttc	aaggccgaaa	tgataaaaaga	gggtaagcac	900
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<210> 1840

<211> 735

<212> DNA

<213> B.fragilis

<400> 1840

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tacaatcccg	aacgggttca	tttcgggtgt	ctgaggggtac	tgaacgatga	ccgggtagcc	180
ccgggtgaag	gttttcagac	ccatccccat	aaaaatatgg	aaatcgtctc	cataccttta	240
aagggtcttc	tggcacatgg	cgacagtaaa	aagaacagtc	gtaccattac	tgtaggcgat	300
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gaaccggtgg	aatttctgca	aatatggatc	ataccgaaag	aacggaacac	tcatcccctc	420
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ctgatcgaag	gagaagtaaa	gatagatgat	gtgatcctga	ctcgccgcga	cggattggga	660
atatccgaaa	tcaagaattt	tgagatagaa	actctgaaag	actctaaaat	actactgata	720
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<210> 1841

<211> 597

<212> DNA

<213> B.fragilis

<400> 1841

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tataaacagc	tccgtgtggg	aaggtacgga	ggggattttt	atgtttataa	atttcgttcg	180
atgcgtgtag	gggctgataa	aaaggggttg	ataacggtag	gagggagaga	tccgagaata	240
actcgtaccg	gatactgat	ccggaagtat	aaattggatg	aattgcctca	gttggttaac	300
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ttatataccg	atgaacaaaa	gaaagtattg	agtgtacgtc	cggggattac	ggattatgct	420
tctattgagt	atgtagatga	aaatatgatt	cttggagagg	cttcggatcc	tgacagagca	480
tatatagaac	agattatgcc	cgataagata	cgggtataata	tgaaatata	ctgtaatcgt	540
tcggtgaagg	aatatattta	aattatatatt	ctgacatttt	ggagcatcat	tcgttag	597

<210> 1842

<211> 1119

<212> DNA

<213> B.fragilis

<400> 1842

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accgcaggag	agaacagtgg	ttttcaggac	gaggcatata	cagccgtagg	agcacaaata	180
ctgcccacta	tggaagagac	atacgtatg	gcccagatga	tagtaaaagt	aaaagaacct	240
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gcttccgata	gagagttgac	tcttgccatg	atagagaacg	gctcgggtctg	cctggcctac	360
gaaacagtgg	aaaaagccga	ccattctctc	ccgtctgtga	tacctatgag	tgaagtagca	420
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tcggtactga	ttccggggaga	caaggctccg	cacctgatca	cccgtgatat	gctgaaaatg	780
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ctgccctatg	tcatagcatt	ggcaaacaaa	ggatggagaa	agggcatgca	gaaagatccg	1020
gcgctggctt	taggtctgaa	tgtggtagaa	gggaaagtgg	tatatcgagc	gatagccgat	1080
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<210> 1843

<211> 753

<212> DNA

<213> B.fragilis

<400> 1843

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gcattgtctta	aggacggcat	cacttccgaa	aaaaaatatg	aagatgctaa	aatgctgaaa	240
aatctatata	atacattcat	ttccgaactg	gaatatattc	atcaagagaa	aaataaggag	300
attatagatg	aacgtactct	tttcagactt	catcaatcta	tttccacagg	tttggtttct	360
aatgaggaat	caggctttttt	aaggacacgt	gcagttagga	tcagcggtag	tgattatgct	420
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gctgatatta	ttcctgtata	ttcagcaaaa	gatgctgata	ttttgaatta	caggaaagg	660
ttgattcgat	tttatgaaac	gggggattac	actaagtatt	ctgactactt	tctaaatagg	720
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<210> 1844

<211> 1827

<212> DNA

<213> B.fragilis

<400> 1844

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aacgtatata	aatatacttt	ctccgatttt	gataaggcac	agcaggttat	ggaacaattg	180
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aatgtcggcc	aatattataa	ggcgttgaag	ttctataagc	gtgctttgga	cagtgactcg	300
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tgtttgcata	atgaaaataa	aaaatcgctg	tatgtctatt	tactttttaa	aagggcagag	420
cagtgcgggg	ataaagccat	gcagtcgctt	gctttgttca	atatgggtaa	aatgctgtat	480
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aagacggact	atcgggtataa	atacgataat	ctgcgttatg	attacaacac	tttactgata	600
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ttttcgggaa	agtatggagt	gactccgaca	gatttttcagg	tgggggtaca	acatattaat	1800
aataagaata	ttactgagga	taagtga				1827

<210> 1845

<211> 786

<212> DNA

<213> B.fragilis

<400> 1845

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ataataattg	atgggaaatc	taatgattca	acactaggaa	ttgtgaaaga	atatatacct	180
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atttcagggtg	attatgatit	gatggttcgt	tttcttttag	tgaagaaact	taagtataaa	600
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gttttag						786

<210> 1846

<211> 1470

<212> DNA

<213> B.fragilis

<400> 1846

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ggcaacttcg	gagaaatccg	ggctaaccat	tttcatggag	ggcttgattt	caagactcag	180
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<210> 1847

<211> 849

<212> DNA

<213> B.fragilis

<400> 1847

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<210> 1848

<211> 693

<212> DNA

<213> B.fragilis

<400> 1848

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gaagtatggg	ggttcaaaaa	agcccgcttg	attatctgga	gtggcctttgc	catgaacttc	240
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gctttttctg	tccgttcggt	cctcaatgcc	tacgtcatga	gtaaaatgaa	agtggccagt	420

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atccgtgtcg	tgaaagccgt	taagcgaatt	gacggaagcg	atgtctacga	tacggacatc	660
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<210> 1849

<211> 399

<212> DNA

<213> B.fragilis

<400> 1849

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cggaaagagg	cagccgacgg	ctcttttatc	ctggtatatc	tcacagataa	caccaccggt	180
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gaaagtcac	tttgcttccg	tgtagcggga	gattatgatg	ccgtacgcca	atatcacaaa	300
gaaatggact	gcgtatgctt	tgagaatact	tccatggggc	tctatttcat	caatgatccg	360
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<210> 1850

<211> 186

<212> DNA

<213> B.fragilis

<400> 1850

ttctacgact	taaaatttga	tacaatgttt	ctgagtgttc	atatgattta	cctgctcgat	60
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catattttatc	caataattca	atgtaacgat	catgtatatt	atgatatccc	atatcgcgtc	180
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<210> 1851

<211> 279

<212> DNA

<213> B.fragilis

<400> 1851

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ctgttcaagc	aattcccggg	tataaaggcc	gtgtgttatt	atgctgtaag	atggggaaag	180
atttttactg	attatataga	caaggatgtg	gcgtgtgcca	aaaacttaga	ggtgggtgtt	240
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<210> 1852

<211> 444

<212> DNA

<213> B.fragilis

<400> 1852

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cagcttagtc	ccatttcggt	tagtgccgta	aaaggaaatc	agttattgat	tacattgaat	180
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gatgaaataa	aaagcagagg	tgtatattat	agtggcaagg	atgggcaacg	tgtccctatc	300
acattgcaaa	cggttgctga	tgtagaagag	gaccatagtt	atattataaa	aggattgtgg	360
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<210> 1853

<211> 258
 <212> DNA
 <213> B.fragilis

<400> 1853
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 ataagcttac attatgaaga gcagcatatt acagccgtat ggggtctactt gacagtaaaa 180
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 cgaaaaggtag atgggtag 258

<210> 1854
 <211> 1239
 <212> DNA
 <213> B.fragilis

<400> 1854
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 cttcgtcagg aggttgaagg taagagttta ttggtgattg gtgggtgcggg ttccatcggg 180
 tcttcctata taaaagccat tcttcctttt aagccttcca aacttggtgt gattgattta 240
 aacgaaaatg gattggccga actcaccgcg gatttgcggt ccacttacgg tctgtatatt 300
 ccggacgagt atcgtactta tacattgaat tttgcagatc ccatcttcga gcgaatgttc 360
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 gctgccaatc ctgtgaatat aatgggtgcc agcaaacgta tcatggaaga tatgataatg 600
 gcgtactctt ctaaatttaa agtcactact gcccgttttg ccaatgtcgc cttttccaat 660
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 cccgggtgagc ggttgaactt ggaacgtttt tcttctttgg gtgtgattga ggatgtcagt 1080
 aaacgtcctt tgtctgaatt ggattccttc tttgatgacc tgggaatctct ctttgccctt 1140
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<210> 1855
 <211> 1506
 <212> DNA
 <213> B.fragilis

<400> 1855
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 gcttctacac aaattgacgc ggtatattcc aatccggcgg gtgtggcttt catggaaaac 180
 ggcttccact tgtcactcaa cggacagagt gcgttccaga caagaactat cacttctact 240
 ttcgctccgt ttgcagggtt tggaggaaac gctaccaaag tatataaagg agaagcttcg 300
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<210> 1856

<211> 1221

<212> DNA

<213> B.fragilis

<400> 1856

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gaatttggtc	cgttgcaacg	tccttttatt	atcggtaacg	aaaaaaaaata	ccttgcaaaa	180
tgcattgata	ctacttttgt	ctcagagtgt	ggcaaatttg	tcgatcgctt	tgaggagcag	240
gttgcttcct	ataccggctc	aaaaagagct	gttgctctgt	tgagtgggtac	taatgcattg	300
cacatgggta	tgcttccttg	cgggtgttgag	cgtgatgatg	aagttttaac	tcagggtctt	360
actttttatcg	ctacctgtaa	cgccatcagt	tatatgtgtg	cacatcctgt	atttcttgat	420
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gaatatcata	tagaacttgt	cgaggatgcg	gccgaaagta	ttggtagttt	ctataaaggc	660
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<210> 1857

<211> 234

<212> DNA

<213> B.fragilis

<400> 1857

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actcttgatg	cactgggact	tcgcaaatg	aaccgtgtgg	ttgaacacga	aagcactcct	180
tcaattcttg	gaatggtaga	taagggttaa	cacttggttg	ccattgttaa	gtaa	234

<210> 1858

<211> 342

<212> DNA

<213> B.fragilis

<400> 1858

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------------	------------	------------	------------	------------	------------	----

acaatgctga	aatgtgcttc	atcgaactcg	ttgactacaa	cgaaaacatg	gctaaagaga	120
aagttgctaa	gaaagcaact	cgtactcgtc	gttcaaagaa	aactactgaa	gctgctcctg	180
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attcttatag	atataaaaaa	ggctgctctg	aaaagagtgg	ccttttttgt	tgattttact	300
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<210> 1859

<211> 1851

<212> DNA

<213> B.fragilis

<400> 1859

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gaacattcac	tctttcagta	cataaaccgg	actgccacgc	aaccggtaa	aaaaagactg	480
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<210> 1860

<211> 582

<212> DNA

<213> B.fragilis

<400> 1860

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gtgaacccgg	ctatcaatgt	tgctattgaa	gatggacaca	tcactttaac	tgaaaacgaa	180
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aatcctctta	ttctttttaga	gtcttggtgac	aaacaattgc	ttgggtcaagt	ttgctctaag	480
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582

<211> 612

<213> B.fragilis

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tcaagaaaaa	gaaaaacttc	tgaatatggt	attcagcttc	gtgagaaaca	gaaagctaaa	180
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<211> 489

<213> B.fragilis

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<211> 1008

<213> B.fragilis

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ttcagaaact	tcgaaaagaa	atcgcttacc	gagcttgatg	atttgctgga	aagtctgaat	960
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<210> 1864
 <211> 450
 <212> DNA
 <213> B.fragilis

<400> 1864
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 tacatcctta attataagtt tgtagaagat ggtcctcaag gaactattaa agttgccttg 240
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 ggtggtgaag tattgtgtta tgtatattaa 450

<210> 1865
 <211> 561
 <212> DNA
 <213> B.fragilis

<400> 1865
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 ttccctgaaa ttaatatcga tagtattacc agaattctcg gaatgaatat tacctttgta 480
 acctctgcgc aaacagatga agaaggttat gccttattga aagaattcgg tttaccgttt 540
 aaaaacgcta aaaaagactg a 561

<210> 1866
 <211> 303
 <212> DNA
 <213> B.fragilis

<400> 1866
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 tttgaagctg cacagaaatt acaggagctt cctaagaatt ctaatccgat tcgtatgcac 180
 aatcgctgta aattgactgg tcgtcctaaa ggatacatcc gtcagttcgg tgtttcaaga 240
 atccagttcc gtgagatggc atctaattggg ctgatcccag gtgttaagaa agcaagctgg 300
 taa 303

<210> 1867
 <211> 222
 <212> DNA
 <213> B.fragilis

<400> 1867
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 gcaatgtttc gtgttgaatt agaaaacgga catgagatta ctgctcatat ttctggtaag 120
 atgagaatgc attacattaa gatcctaccg ggtgataaag tcagagtcga aatgtctcct 180
 tacgacttat cgaaaggaag aattgtatatt agatataaat aa 222

<210> 1868
 <211> 477

<212> DNA
 <213> B.fragilis

<400> 1868
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 ggctctacta aaacaagaaa aagaatcgga cgtgggtcgg gttctggctt aggaggtact 120
 tctacaagag gtcataaagg tgctaaatca agatctggat actctaagaa aatcgggttt 180
 gaagggtggc agatgcctct tcaacgtcga gtacctaaat ttggttttta gaacatcaat 240
 agaattgaat ataaagctat taacttagaa acaatccaga aattagctga agctaagaag 300
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 gttaaagtat taggtaacgg aactttgact gctaagctga gtgtagaagc tcatgcattc 420
 tctaagagtg cagttgctgc tatcgaggct gctgggtgaa atgtagtaaa actctga 477

<210> 1869
 <211> 447
 <212> DNA
 <213> B.fragilis

<400> 1869
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 aaacaggcgg aacaagatat ctatatggct atgtcaacaa tgaaagggga tacgcacgaa 180
 acagtcagca gtcccagac accctatttc cctgatgccg aattggccgg gaccggaatt 240
 cagacgcatac agatcgcaat gtgcgcgata cagcgtatac aagcggccga atctattttt 300
 tcttttaaaag cccttgctca aaggctggca gaccgtgatg ctgttttatc tcagcattgg 360
 gggaagcttt atgaaaccac tactttctat tgggtggcatc ctgtaagcga atactatggt 420
 ttcgctctaa ggcgtattat tgtatag 447

<210> 1870
 <211> 357
 <212> DNA
 <213> B.fragilis

<400> 1870
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 atctatgtcc agattatcga cgatttgtct ggtaagacat tggctgctgc ctcttctactg 180
 ggtatgactg agaagttgcc taagaaagaa gttgctgcta aagtgggtga gattattgctg 240
 aaaaaagctc aggaagcagg tattacgact gttgttttcg accgtaatgg ttacttgtat 300
 catgggagag taaaagaagt agctgatgct gctcgtaacg gtggacttaa atttttaa 357

<210> 1871
 <211> 384
 <212> DNA
 <213> B.fragilis

<400> 1871
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 gtagacaaaag atctgaaggt gaaagactgg acagatgatac aggctgcaaa gattcgtgag 180
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 aagcgattaa tggatattgg ttgctaccgt ggtgtacgtc accgtattgg tctgcctgta 300
 agaggtcaga gcactaagaa caatgcgcgt actcgtaagg gtagaaagaa aaccgttgca 360
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<210> 1872
 <211> 531
 <212> DNA
 <213> B.fragilis

<400> 1872

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agtttctctg	caattgtagt	tgtaggtaac	gaagaaggta	ttatcgggtg	gggacttggt	180
aaagctgggtg	aagtaacagc	agctatcgct	aaagggtgtg	aatcgggctaa	gaaaaaatctg	240
acaagagtgc	ctgtactgaa	aggtactgtt	cctcacgaac	agtcagctaa	gtttgggtggt	300
gctgaagtat	tcatacaaac	tgcttctcac	ggtagctgtg	ttgtagccgg	tggtgctatg	360
cgtgccgtat	tggaaagtgt	tggtgtaact	gacgttttgg	ctaaatcaaa	aggatcttca	420
aatccgcata	accttgtaaa	agccactatc	atggccttag	gcgagatgcg	tgatgcaaga	480
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<210> 1873

<211> 804

<212> DNA

<213> B.fragilis

<400> 1873

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gagctggata	aggtagcggg	agagtttatc	agagatcatg	gtgctgttcc	tacctttaa	180
ggttttccca	atcaatatgg	agatccgttt	cctgcctctt	tatgcacatc	ggtaaatgaa	240
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gactgttgga	cctacatgaa	tggtttctgt	ggtgattcag	cttatacctt	ttgcgttggt	360
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atgcacgaag	accctcaggt	accgaattat	ggtaaaagag	gatacggaac	acttttaaag	600
aaaggctctt	gcattgcgat	tgaaccgatg	attacgcaag	gtgaccgaca	agttattatg	660
gaacgtgacg	gatggacagt	gagaaccaga	gatcggaaat	gtgccgcaca	ctttgaacat	720
accattgcgg	taggtgcagg	cgaggctgat	attctgtcat	catttaaatt	catagaagaa	780
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<210> 1874

<211> 648

<212> DNA

<213> B.fragilis

<400> 1874

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gctatcgatg	caacaatttt	tgcatcttca	caccagata	ttgcaaaacg	caccagtgtt	180
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ttgttcttga	ttggcgtttt	ccggttggtc	tggaaatcca	aggagattgt	ttacttgccg	360
acgggcagtg	ttgctaaaga	gcaaagtatc	ttttttgatt	tgaaacatct	ggatgaattg	420
acagacatgg	tgaagtcggg	tgatttctct	atgcaatcga	ctgccaaagg	tggtacaagt	480
ggaaatctgc	gttttagatgt	aatgctgtcc	gaagacagaa	agtttgccgc	cgtacaattg	540
ttccaatttg	taccctatac	ttataaccgg	gttacatccg	tacgttattt	cacgaatggt	600
gaagcagctt	ctattgccgc	tttcttgact	aagacaaaag	gacactga		648

<210> 1875

<211> 405

<212> DNA

<213> B.fragilis

<400> 1875

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aatagtgaag	ggcagattat	ctcttggtcg	tctgcaggaa	agatgggatt	tagaggttct	180
aaaaagaata	ctccttatgc	agctcagatg	gctgcccagg	attgtgctaa	aattgcattc	240
gatcttggcc	tgagaaaggt	aaaagcatat	gttaaaggtc	cgggtaacgg	tcgtgaatct	300
gctatcagaa	cgattcatgg	tgccggtatt	gaagttacag	aaatcattga	cgtaactccg	360
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<210> 1876

<211> 1359

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (199)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 1876

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gtcgtgtttc	ctggaatcaa	cccgggtatg	ctgacacaat	tgcatcgaca	aacaagtgag	180
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acttctacca	ttattttggc	agctggaaagt	atgtttatcc	tgtggccttg	tgaaagaatc	540
acagataaag	gtattggtaa	tggtatttca	tttattattt	tgattgggtat	tatcgctcgt	600
cttccgcagt	cattattcca	ggagttgatt	tcccgtatga	ccgacaagac	tggtgggttg	660
atcatgttct	tatttgaaat	agtattcctg	ctgatcgtaa	ttgccggagc	tattcttttg	720
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caacaagtgc	aaagtcattt	gttgatgaga	cattatgatg	gcttgttgaa	gtctggtcgt	1320
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<210> 1877

<211> 186

<212> DNA

<213> B.fragilis

<400> 1877

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ccccggcttc	ctatatataa	agcccggttc	atggtaggta	attttatcga	tatggctgaa	120
aagataacca	ttgctatcgc	attgattccg	aaacagaggc	tgaaggatag	aggagagagt	180
ccgtag						186

<210> 1878

<211> 534

<212> DNA

<213> B.fragilis

<400> 1878

gccagtatac	ctcctccgat	aggggcgatg	actgtagcta	ttccatttat	tccgcogata	60
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acggcaagca	tgccggccag	ttgctgtccc	gaatactcgt	cggtagctat	ggagcgggaa	120
atcactacac	cacctgtccc	ggcaatgcct	tgtaagaatc	gggatgtcac	aaatttgtgaa	180
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aatacaccta	aaaataataa	taagaaccgt	ctggaattct	gtctgtcagt	catttgctatt	480
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<210> 1879

<211> 2280

<212> DNA

<213> B.fragilis

<400> 1879

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<210> 1880

<211> 2409

<212> DNA

<213> B.fragilis

<400> 1880

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<210> 1881

<211> 3663

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (231)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 1881

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<211> 1137
 <212> DNA
 <213> B.fragilis

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 agtgaagcag accgcttatg ggtagctgta tacgatggct tttcacgcat ggcagtacca 240
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<210> 1883
 <211> 195
 <212> DNA
 <213> B.fragilis

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 ggcagtgccca gggatatactt aaatactgtt gcccataatc ctaaccagaa gatatgcatt 180
 agatacatat cgtag 195

<210> 1884
 <211> 705
 <212> DNA
 <213> B.fragilis

<400> 1884
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 aaaaagcaca gagacaaagc agttgttgcc cgcttgattg atattcgtaa agctcaggca 180
 gaatatcgta acattttacaa gcagtatact gcaagctttg acacactgat cgatttcgtt 240
 aagacacaaa agattccttt cgtatctaaa gaaggcgtat tgagcgacaa gcagctggaa 300
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<210> 1885
 <211> 2211
 <212> DNA
 <213> B.fragilis

<400> 1885

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<210> 1886

<211> 1044

<212> DNA

<213> B.fragilis

<400> 1886

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<210> 1887
<211> 408
<212> DNA
<213> B.fragilis
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<210> 1888
<211> 378
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<213> B.fragilis
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<210> 1889
<211> 201
<212> DNA
<213> B.fragilis
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<210> 1890
<211> 552
<212> DNA
<213> B.fragilis
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<400> 1890						
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<210> 1891

<211> 1170

<212> DNA

<213> B.fragilis

<400> 1891

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<210> 1892

<211> 1128

<212> DNA

<213> B.fragilis

<400> 1892

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aatttcacac	tcctaaagga	aatcggcgat	atcagtatca	accggacagc	agataaagat	1080
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<210> 1893

<211> 885

<212> DNA

<213> B.fragilis

<400> 1893

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cggtgtggta	tctatctgat	ttgtacgcag	ggagaagccg	ttgtctctac	cggtgtgcag	180
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ctcgaaactt	ccggagattt	gcaggtgaaa	atgttgatgt	tccctaaaga	agcattttta	300
aatgccatgt	tacctatcga	tacaccttac	tttaattata	ctcacgaaca	tccctgttac	360
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aagcaatata	gtcgtacgca	attactttgc	catcggttta	tgcaattgat	ccgtgaatat	600
agtatgcatt	aacatcaggt	agctttttat	gccgaaaaac	tttgtatata	gtctcgttac	660
ctgcataaaa	ttacagttcg	gcatttagat	ggaaagaagc	ctaaacagct	tattgatgaa	720
cagttgggtg	ctgaaataaa	agtgtctgtt	aatgaacctc	gtttatctgt	aacagaaata	780
gctgagcaac	tgcattttcc	ggaccaatcc	tatttgacgc	atttccttaa	aaagaatacg	840
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<210> 1894

<211> 600

<212> DNA

<213> B.fragilis

<400> 1894

tcaataactt	gtagcccgca	cccccaaac	cagcagctaa	aaaagatgga	cgacacattt	60
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cgctgtgtgg	gcgatgaaga	agcagaagat	gtggtacagg	atgtattcgt	ggaactgtgg	180
aaacgaagag	attccatggt	aataggcgac	cagatccaag	ccttcctcta	tggggcggtta	240
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gacaaatgca	aggaagtgtt	taagttgagc	tatctgcacg	aatgaagaa	taaagaaata	480
gctgacgtga	tgggagtcct	tttacgtacg	gtagaagccc	acatgtacaa	ggcactgaag	540
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<210> 1895

<211> 1437

<212> DNA

<213> B.fragilis

<400> 1895

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<210> 1898

<211> 1293

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (210)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 1898

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aaaagtatca	gcaatcgtgc	ccttatcatc	catgctctgt	caaaaggaga	cgatgtgcct	180
tcgaacttgt	ccgactgcga	tgatacgcan	gtgatgataa	aagctctgac	cgaaggcaat	240
gaagtgtatt	atattcttgc	ggccgggaacg	gccatgcgct	ttctgacggc	ttatctgagc	300
agtactccgg	gtatccatac	catcacccga	acggaacgga	tgacgcaacg	accatacag	360
atattagtaa	acgccttgcg	cgaactggga	gcccatatag	aatatgttcg	gaatgagggt	420
tttccaccct	tacggattga	gggtagagag	ctcacgggca	gcgaaatcac	cctaaagggc	480
aatgtgagtt	cacaatacat	atcagccctg	ttgatgatcg	gtccgggtact	gaaaaacggg	540
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tggtatcaga	tagctgccct	gtctcccca	gcagatatag	aactgaccgg	actgttccgc	780
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<210> 1899

<211> 2631

<212> DNA

<213> B.fragilis

<400> 1899

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atgtttacca	atgcagggat	gaaccagttt	aaagatatta	ttttgggttaa	ccaccggcg	180
aaataccaca	gagtcgcgga	ctcacaaaag	tgcccttcgtg	taagcgggcaa	gcacaatgac	240
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ctgattcagg	gtggcggtgg	cggccaacct	cacttcgcaa	cagccggtgg	caagaatccg	2580
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<210> 1900

<211> 441

<212> DNA

<213> B.fragilis

<400> 1900

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atgcagggaa	tggtaacgga	cagtaactta	ttattttata	aagagtgtat	taaactgctg	180
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gagattatac	ggaacaaagc	tactcgtaat	gctatttttc	tgactgtgct	ttttttgttt	300
ggcgggatgc	tttatcggtg	agcaacagga	gatatcatga	ccgtagatac	ctcttctttt	360
cttatttttc	ttattatcaa	tgtactctgc	cttgaatttg	gtatgcaaaa	agcgcgaaatc	420
gataaaatct	ttaaaaagata	a				441

<210> 1901

<211> 1971

<212> DNA

<213> B.fragilis

<400> 1901

cgacacgata	tgaattttgt	taaccgattc	tttatgattc	ttgtggcact	atgcctggtt	60
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tggaaagggtg	ccgaaggggc	atttgtaccg	actgaaacaa	caaaaatagt	ctgtcctgcc	180
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cgtgcagata	agaagtggg	caaagaaggc	tatacgggtga	aagttaccga	tcgtatcttg	360

ctgactgctc	ccgaaagcat	aggggtatat	tggggaaccc	gtactctgct	tcagattgcg	420
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tataatgccg	ggaaagattc	tatgaattat	gttcgcactt	tagtcttccc	gctagagaaa	1920
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<210> 1902

<211> 591

<212> DNA

<213> B.fragilis

<400> 1902

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ccggaaataa	tcggtgccac	acctgacgga	atcgatatcg	actacgaact	gacacccagt	180
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atgacccgta	tctactacgc	attcctgatc	tctatgcaaa	cagacactta	tggagcccat	540
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<210> 1903

<211> 1500

<212> DNA

<213> B.fragilis

<400> 1903

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tggatcgtac	gtttcgcacc	ggtaaaagcc	aaacagggtac	gtcttcgtat	cctcgacgga	1440
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<210> 1904

<211> 1209

<212> DNA

<213> B.fragilis

<400> 1904

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<212> DNA

<213> B.fragilis

<400> 1905

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<210> 1907

<211> 912

<212> DNA

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<212> DNA

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<211> 240

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<211> 1512

<212> DNA

<213> B.fragilis

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<211> 1029

<212> DNA

<213> B.fragilis

<400> 1912

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<211> 231

<212> DNA

<213> B.fragilis

<400> 1913

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<210> 1914

<211> 1155

<212> DNA

<213> B.fragilis

<400> 1914

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<210> 1915

<211> 933

<212> DNA

<213> B.fragilis

<400> 1915

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tgtcagaact	gcaaaaagtc	agttccta	gccattttcc	atgtttacca	tagacgtggg	180
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cagcccatca	gttcgaaaat	agaaatgctg	gccatgaccg	atgtggaatg	tatctattat	360
cagtttaatc	aacctgaatt	gttttgtgat	atccggtata	atcgtatcat	gaaggagact	420
gacccctcgt	taattccctc	acccttacct	attattcccg	aacttcaaca	ttttcttgag	480
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gggttcgaat	ctttaccgca	tttctcaaac	ttctgtaaaa	agtcatttgg	tacctcgcca	900
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<210> 1916

<211> 258

<212> DNA

<213> B.fragilis

<400> 1916

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gacgggatgc	agccggcggg	atattctgga	cgattatccg	gtgagtgggt	tggaaagtgcg	180
gctggattgg	agcggagtga	cggagaagtt	gccggaagga	gttcggatta	ttttctatcc	240
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<210> 1917

<211> 969

<212> DNA

<213> B.fragilis

<400> 1917

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atggatcatc	cgctccacat	gttatgggac	agggcgggtga	ttgcggcaat	gacttttttg	180
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<210> 1918

<211> 219

<212> DNA

<213> B.fragilis

<400> 1918

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ttttcacctc	tggctgcacg	tgtacgaagg	gcacgtggag	agtctccaaa	ggaagctttg	180
cagaaatgtg	caaaatgtga	taaagagtcg	aatccgtaa			219

<210> 1919

<211> 1026

<212> DNA

<213> B.fragilis

<400> 1919

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gccatggtag	caatgccgga	tgcttgagac	agaatgatga	ttggtgtaaa	ccagaaggat	180
tggctcgtgt	tacgtgaaag	agtgcaggct	gacctccacg	ttccggatcg	tgaggatgtg	240
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tggctcggta	atgccgagta	taaatgtccg	tggctggctca	atagtagccg	ggagttttgc	660
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aatcgcttgg	caggacattt	cattggagct	tatgccgaag	ggggaattta	tgatttccag	780
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acggagtaca	agaagtacac	tccttatgag	ggagacttgg	tttggaagag	tagtgcacgc	960
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<210> 1920

<211> 498

<212> DNA

<213> B.fragilis

<400> 1920

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ggaattatcc	acaaagtaaa	cgggatatat	ttcaggtcgg	aagccgacag	ggaggacaat	120
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gtgggggataa	gcagttccgc	cgtcggcgta	aagattcaca	gactgaaagg	tcagctacaa	480
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<210> 1921

<211> 2502

<212> DNA

<213> B.fragilis

<400> 1921

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gccggaaaaag	tgaaccggat	tccggacata	gagatcgata	cccaggcgga	agagctggaa	360
gaagtacagg	tgattggaaa	atctgaagct	cgccggcagc	aggagcaggc	gtatgccata	420
tcggtactcg	acatcaagaa	agcgtataat	agcgtgcac	ctctcaacaa	attattgaac	480
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<210> 1922

<211> 1029
 <212> DNA
 <213> B.fragilis

<400> 1922

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aatacggcag	tgagtaagac	aacaagagct	acgactttag	tgaactcagc	ttttacaaag	180
tttacggcat	atgcctattc	tactactgag	gcatttgcta	atgctacaaa	agttaatgcg	240
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<210> 1923
 <211> 1134
 <212> DNA
 <213> B.fragilis

<400> 1923

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attaccgatg	ccacacaacc	ttggcgcttt	gtagctccat	tggagaaaaga	gtttttgccg	180
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agtactgttt	ttatcaatcc	gtatagcgga	caggtattga	agtcggtagt	gaatcataac	360
ggtgatttgc	atttcttccg	gttggtgctt	agcgggcac	gcactttatg	gctcccacgg	420
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aatttggtttt	ttgaccgggt	tacactgggt	tctttgaaag	gagccggtcc	ttatgccggt	960
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<210> 1924
 <211> 291
 <212> DNA
 <213> B.fragilis

<400> 1924

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aaaaagaagc	aacctaacgc	aaagcagaaa	caggaaaaac	aagaacaaaa	tggaagggaag	180

aaagagtata	tgaaggtatt	ttatctttcc	ggaagccttc	ttcattcaag	agcaacggga	240
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<210> 1925
 <211> 429
 <212> DNA
 <213> B.fragilis

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gagcataccc	gtcacgagtt tctttcatcg gtaggcgtaa gctttgcaaa actgcatgaa 180
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<210> 1926
 <211> 768
 <212> DNA
 <213> B.fragilis

<400> 1926	
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gatggagaca	ccatcacagt tgaaccttgg cgttctgccg gtttcccggg aatccgtgac 360
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aactgtacaa	acacacgtgc ttgtgaagca gagtgtccga agaacatttc aatcagcaac 720
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<210> 1927
 <211> 636
 <212> DNA
 <213> B.fragilis

<400> 1927	
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tttgcgagga	attatagcaa agccttttct aaatcggcac cttatatgct ggtaggtgta 180
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<210> 1928
 <211> 1029
 <212> DNA

<213> B.fragilis

<400> 1928

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<210> 1929

<211> 495

<212> DNA

<213> B.fragilis

<400> 1929

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<210> 1930

<211> 993

<212> DNA

<213> B.fragilis

<400> 1930

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<210> 1931

<211> 1959

<212> DNA

<213> B.fragilis

<400> 1931

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<210> 1932

<211> 879

<212> DNA

<213> B.fragilis

<400> 1932

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<210> 1933

<211> 903

<212> DNA

<213> B.fragilis

<400> 1933

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<210> 1934

<211> 225

<212> DNA

<213> B.fragilis

<400> 1934

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atggacagta	tcgaatacta	cttaggagtc	tcagtgaat	cccagctatc	agcaactgaa	180
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<210> 1935

<211> 954

<212> DNA

<213> B.fragilis

<400> 1935

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<210> 1936
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 <212> DNA
 <213> B.fragilis

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<210> 1937
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 <212> DNA
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<210> 1938
 <211> 2157

<212> DNA

<213> B.fragilis

<400> 1938

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<210> 1939

<211> 1230

<212> DNA

<213> B.fragilis

<400> 1939

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<210> 1940

<211> 861

<212> DNA

<213> B.fragilis

<400> 1940

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<210> 1941

<211> 195

<212> DNA

<213> B.fragilis

<400> 1941

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<210> 1942

<211> 621

<212> DNA

<213> B.fragilis

<400> 1942

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621

<210> 1943

<211> 720

<212> DNA

<213> B.fragilis

<400> 1943

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aagctggccg	agtccactcc	tgtgatgact	gcggaagcca	tggaagcggg	ccaacagac	660
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<210> 1944

<211> 705

<212> DNA

<213> B.fragilis

<400> 1944

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<210> 1945

<211> 399

<212> DNA

<213> B.fragilis

<400> 1945

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<210> 1946

<211> 876

<212> DNA

<213> B.fragilis

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<210> 1948
<211> 2196
<212> DNA
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<211> 231

<212> DNA

<213> B.fragilis

<400> 1949

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acaggttcga	ccagcacccg	attttccgta	aaagagaata	aagccaatac	acctatacat	180
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<210> 1950

<211> 954

<212> DNA

<213> B.fragilis

<400> 1950

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<210> 1951

<211> 2031

<212> DNA

<213> B.fragilis

<400> 1951

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<210> 1952

<211> 2286

<212> DNA

<213> B.fragilis

<400> 1952

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<210> 1953

<211> 183

<212> DNA

<213> B.fragilis

<400> 1953

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taa						183

<210> 1954

<211> 189

<212> DNA

<213> B.fragilis

<400> 1954

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<210> 1955

<211> 684

<212> DNA

<213> B.fragilis

<400> 1955

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gctaaacaag	ttatcttctt	gtcagctgat	gccttcgggtg	tattgcctcc	ggatcttatc	180
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ttatcattgc	acccaactaa	atatgcagaa	gaattgggta	agaagatgga	aatgaccggg	360
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cttgatcctc	gtgatactta	cgctgatcct	gcacagtggg	atgaaaaagc	aaaagacctt	600
gccggtcgct	tcataagaa	cttcgctaag	ttcactggaa	acgaagctgg	taagaagttg	660
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<210> 1956

<211> 216

<212> DNA

<213> B.fragilis

<400> 1956

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aataagttat	tatatctcat	ttttttctat	ttttttattc	cgtttctgat	tagtaatgcy	180
tcaatcgtag	gttcttgtcc	tctgaaacgt	ttgttaa			216

<210> 1957
 <211> 1128
 <212> DNA
 <213> B.fragilis

<400> 1957
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 cggagcgcca ttcaccgatt acggaacaat agatctggct gtgattccgg gtgttgcttt 180
 cgatcgggtac ggacatcggt taggccgcgg caaaggatat tacgaccgtt tattacctca 240
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 ccgcaattct ggcatacgc agccaatgaa ggatgcacgg ctattatcgg actggacgca 1020
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<210> 1958
 <211> 498
 <212> DNA
 <213> B.fragilis

<400> 1958
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 ctggacggag ctgtgaaaac tttgaagaaa catggagcca aagaagaaaa tatcctggta 180
 aagacagtc cccgaagtgt cgaacttacc ttcggcgcta atcagatgat ggaaaatagc 240
 gatatagat caattattat cattggttgc gtaattaaag gagatactcc acattttgat 300
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 gttattttacg gattaattac caccaacact atggagcagg cagaagacag agccggcggc 420
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 tggagtttaa ataaatag 498

<210> 1959
 <211> 1188
 <212> DNA
 <213> B.fragilis

<400> 1959
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 aaaaccaatc tgctcgatgc ggtctacttt ctgtcttttt gtaaaagtgc aggaaatccg 240
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 aataaggcat tgggtacaacg aaatacattg ttgaagagtg aacaaccgat agaagaagag 600

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acgaatcgtg	aacatttgga	ccgtatatta	tataagggtg	ggagtgacta	taaaatgttt	1140
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<210> 1960

<211> 1101

<212> DNA

<213> B.fragilis

<400> 1960

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gaagttgatg	ctgacgttgt	agttgaatca	acaggtttct	tcttgactga	cgaaacagct	420
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<210> 1961

<211> 1554

<212> DNA

<213> B.fragilis

<400> 1961

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<210> 1962

<211> 711

<212> DNA

<213> B.fragilis

<400> 1962

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aacgaagaag	cagtaaaagc	cttcaccaag	attaaggata	aataacttcca	gtcttatcag	660
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<210> 1963

<211> 189

<212> DNA

<213> B.fragilis

<400> 1963

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<210> 1964

<211> 2151

<212> DNA

<213> B.fragilis

<400> 1964

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ccattttttg	agaaatatac	aactccgtat	ggcactgttc	cttttgacaa	aataaaaaat	180
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agtaaaactga	cattggattt	cagtgaaaat	aacctgaaag	aaaccaataa	ctatcagttg	660
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gaaacagccc	gggaaaaag	agtgaatggc	tgggtgttca	cattgcatgc	ccccagttat	780
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aatacaaaat	gtaccacga	caacgaatat	aacaacctgg	aaattgtgaa	aaagatagcc	900
aatatccaca	tggaaatcgc	acaattactg	ggttatgaca	attatgcgga	atatacactg	960
aaagaacgca	tggccgaaac	cggatgatgc	gtatataaac	tgctcaacca	attgctggat	1020
gcatataccc	ccaccgccc	taaagagtac	gaagctgtac	aagaattagc	ccgtacagaa	1080
caaggagatg	cttttgaagt	gatgccttgg	gattggagct	actactccaa	caaactgaaa	1140
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gaggtgga	ccttcctcca	cgaattcggg	catgccttgc	atgggatgtt	tgccaactca	1560
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cagatattgc	ccacagtttc	ggaaacctgt	atgagtacc	agttctcaca	catctttgcc	1920
ggaggatatt	cggcagggtta	ctatagctac	aagtggcgcg	aagttctgga	tgcggtatgca	1980
ttctcactgt	tcaagcaaaa	aggaatcttc	aatgaagagg	tagccaattc	cttccgtaac	2040
aacatcttgt	cgaagggcgg	aacagagcac	ccgatgatac	tttacaacg	tttcagagga	2100
caagaaccta	cgattgacgc	attactaatc	agaaacggaa	taaaaaata	g	2151

<210> 1965

<211> 249

<212> DNA

<213> B.fragilis

<400> 1965

ttactggaaa	agagcattta	cggaaatata	atctataata	tgctggaaaa	agaagcctat	60
attcaatatt	tcaaccaaag	cgatcagact	gtgaagaaga	ccgtcgagtt	gctcgaaagt	120
gaaaaagcat	tccttaaggc	tcccgtcagc	gtagaacctc	aaaaggagga	aaagaaagat	180
ggaaagaaaa	aaacaactgc	gcaagtggat	agcacaggag	aagaagaaat	actccgactc	240
tacgcttaa						249

<210> 1966

<211> 309

<212> DNA

<213> B.fragilis

<400> 1966

aatggaggaa	aaagagagat	gaaacgaaac	gatgcggaac	cgattggaaa	actgattcag	60
aaatatctgc	gtcaggagag	cttggagtct	ccactgaatg	agcaacgctt	acttgattcg	120
tgggagacgg	tgctgggacc	tactattatg	tcgtacacaa	gggatttgta	tattcgtaat	180
cagggtgtgt	atgtacactt	gacctctgct	gccctccgct	aggagtgtat	gatggggcgg	240
gaacttttgg	tccgtaattt	gaatcagaag	gttggggcta	cggtgattac	caatattatt	300
ttccgctaa						309

<210> 1967

<211> 1284

<212> DNA

<213> B.fragilis

<400> 1967

ctacacatga	aaactccttc	gcaaacacat	gtgctcggac	tggcacatcc	cccacttccg	60
atgggtacgcc	ttgctttcat	agggcttggc	aatagagggtg	tattgactct	gcaacgttat	120
ctgcaaatcg	aaggtgtcga	aatcaaagca	ctttgtgaaa	tcagggaagg	caatctgggtt	180

aaagcccaaa	agatacttcg	ggaagccggt	tatccgcaac	cggacggcta	taccggaccg	240
gatggatgga	aacgaatgtg	cgaacgggat	gacattgacc	tcgtgttcac	ctgtaccgac	300
tggctgaccc	acactcccat	ggcagtatac	tccatggagc	atggcaagca	tgtagccatt	360
gaagttcctg	cagccatgac	tgtagaagag	tggtggaagt	tggtagatac	ggctgaaaag	420
acaagacagc	actgcatgat	gctcgaaaat	tggtgctatg	accogtttgc	actgactacg	480
cttaacatgg	cacaacaagg	tgtattcggc	gaaataaacc	atgtagaggg	agcatacata	540
catgacctgc	gttctatcta	cttcgccgac	gaaagtaaag	gaggatttca	caatcactgg	600
ggaaagaaat	atagtataga	acataccggt	aatccttata	cgaccacagg	tcttggtccg	660
gtttgccaga	tactgaatat	ccatcgggga	gaccgcatga	actacttggt	ctctctgtcc	720
agtcttcagg	caggatgac	cgaatatgcc	cgtaaaaact	tcggagcaga	ctctccggaa	780
gcccgccaga	aatacttatt	gggtgacatg	aatactacct	tgatacaaac	agtgaagggc	840
aaaagtatca	tgattcagta	taacgtagta	actccacgtc	cttacagccg	cctgcataca	900
gtttgtggaa	caaaaggatt	cgcgcagaaa	tatcccgttc	ccagcattgc	tctcgaaccc	960
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gtatatgatg	ctgccgaatg	gtcgtgcatc	acagaactga	gcgaacaatc	ggtattaaac	1200
ggcagtatac	cggtagagat	tccggacttt	acgagaggag	catggaagaa	atgccatata	1260
agcagaacat	cagatctcta	ctaa				1284

<210> 1968

<211> 516

<212> DNA

<213> B.fragilis

<400> 1968

aaaaaaatga	aatataaata	cttattatta	ttacttttga	tgtccctttt	tgtaagcgga	60
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attaccaaaa	agaacgaaca	caaaccctat	gattttctggg	gtgataaaga	caaatatgaa	180
caatccatca	agaattacat	caataaagaa	gggtgcataca	caatcaaatt	cgaaggggag	240
actacagaca	atgtcatcag	cggaaagtgt	agcgggaacgc	ttttgtcaca	ttcttatacc	300
ggaacctgga	gtgccaatgg	cgaaggaat	gctttctcag	cttccgtaaa	agggctctgaa	360
aatgatccgt	taggatttag	taacaaatgt	gtcgaaggac	tcaacagggc	tacttcgtac	420
aaaggggaatt	acgacaacct	ctttatctat	tacaaggatg	agggaggaag	agagttatgc	480
ctgggtatttc	atgttgataa	ggacaacaat	aaataa			516

<210> 1969

<211> 444

<212> DNA

<213> B.fragilis

<400> 1969

cagcgtatgg	acacagcaaa	cagcaaacaa	tcagatttgg	acaagcggtta	tatccgcatg	60
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aaagacaaaa	tgattatctc	agacggatat	aacggaacac	catccggctt	tgaaaacggt	180
tgtgaagatg	ataacaacgt	caccaagccc	tatgttctgc	atgctgaagc	caatgccatc	240
accaagatag	cacgttccaa	caacagtagt	gacgggtgcta	cgatgtatgt	cactgcttca	300
ccttgcatcg	aatgtgccaa	actgatcata	caggcaggca	tcaagcgagt	ggtgtactct	360
gaacactatc	gcctggaaga	cggaaatagag	ttactgcaac	gtgcaggtat	cgaggtcgtt	420
tttgtcgata	cgagtgaaaa	atga				444

<210> 1970

<211> 2028

<212> DNA

<213> B.fragilis

<400> 1970

actatgagac	taaaattaaa	acatatatac	ttctgctcat	tgatagcaat	gggcggattg	60
gcgataaact	cgtgcgagga	ttttctcgac	cggctaccta	tcagccaggt	aactcctgag	120

aagtactttca	gtacagtaga	ccaggtagca	aactaccta	ataactacta	caacgactat	180
ctggacgact	ccagaaatta	taagctatat	caccaacagg	cttggaactc	aggcatgcaa	240
cgcaacgatg	ccaacacaga	caacctgttg	gcagacgaca	gtagcctgga	ttattttgcc	300
ggtaactggc	aggttaggaag	cgggaaatcg	attcaagctc	cattaaaccg	gatccgtaca	360
tgggaattacc	tgcttgagca	agtacttccc	aaagaaaaag	aaggatcgat	tcaaggatcg	420
gttgaggacc	tgaaacacta	catcggcgaa	gcttacttct	tccgtgccat	ggcctactat	480
aaagcatttg	tgaatatatg	cgactatcct	atcgtagata	aagttctccc	cgatcaggaa	540
gagatttttac	tggagtacag	tacacgtgct	cgcgcgaatg	aagtagcccg	ccagattctg	600
aaagattttg	atgaagctat	caaccgtatg	cacgaccagg	gtttccaaaa	caaccagcgt	660
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gatgcaaacg	tttcgcccaa	aagcgacagc	aaatacttac	gccacttcgc	cagaacctca	1860
atcaataatg	aattgtatga	cggctctgact	tggcgtaaag	cattttatct	ggatccgatc	1920
ggcatagaag	atatgtcttt	gaccgctacc	aatccggaag	atatcaacac	aactcagttg	1980
tatcagaatc	cttactggcc	gatgactgcc	ggtaaagcat	tggaatag		2028

<210> 1971

<211> 555

<212> DNA

<213> B.fragilis

<400> 1971

aacctcaaaa	ggaggaaaaag	aaagatggaa	agaaaaaaac	aactgcgcaa	gtggatagca	60
caggagaaga	agaaatactc	cgactctacg	cttaaatcgt	tgtcggaaaa	ggtattgata	120
actcttgagg	catgccccga	atttcaaaaa	gggcatacta	tattgctcta	tcaactcaatg	180
aaggatgaag	tgcagacgca	cgccttcatt	gagaagtgga	gccggtcgaa	aagaatcata	240
ttgcctgtag	taacaggcga	cgagttagaa	cttcgcgttt	acacaggccc	ccaagatctc	300
gccatagggt	cgtatggcat	tgcogaacca	accggagcgc	cattcaccga	ttacggaaca	360
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ggcaaaggat	attacgaccg	tttattacct	caaattccgg	ctcccaaagt	cggcatttgt	480
ttcccgtttc	aattgataga	agaagtaccc	gcagaagcat	tcgacttcgc	tatggatact	540
attatagcac	aatga					555

<210> 1972

<211> 1485

<212> DNA

<213> B.fragilis

<400> 1972

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attatcaacg	gctcttcgaa	caagttgaat	gctttgctgc	gcattgtcga	tgaccagtat	180

gtggacaccg	tcaacatggc	cgaccttgtg	gaaaaggcaa	tgccacagat	tctggcagag	240
ctggatcccc	actctactta	cattccggca	caaaacctgg	agaagtgc	atcggaactg	300
gaaggcagct	tcagcgggat	cggatccag	tttaccatcc	aggacgacac	tatccatgtg	360
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gtgatggtag	acgacagttt	gtttgtaggg	aaaaaagtga	ccaacgaacg	tgccatgcgc	480
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gatcttttga	acttcaactat	cacacgcggt	gacattccgc	aaaacaccat	cgacgcagct	600
tatatgttga	cagatgactt	tggctatata	cagggttagta	aattcggacg	tactacacat	660
gtggagtgtc	tgaatgccat	tgttttactg	aatcataaga	actgcaaagg	gctgatcatc	720
gacttaoctg	gcaacacagg	aggatatatg	gaagctgcag	tgcgcagtgt	caacgaattc	780
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tcggcttcgg	ccagtgaat	tttcaccggt	gctattcagg	ataatgaccg	aggtatggta	960
gtgggtcgcc	gttcgttcgg	taaaggcctg	gtacaacagc	ctatcgactt	cagtgcgga	1020
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ccttatcaga	atggtaaaga	ccgcaactac	gaaatggatt	ggctgacacg	atatgaacat	1140
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accacgggag	tgacttcata	tctgaccgag	gtgctgagca	aaggacttac	catccaattc	1320
accttccatt	acacggataa	taaccgcgat	aagttgaaga	agtacgaaga	cgaagaatca	1380
ctottaaact	atatgcgtcg	tcagggactg	gtcgaacagt	tcatacgcta	cgctgacagc	1440
aaaggggtga	aacgaagaat	catcctgatt	cagaaatcat	attaa		1485

<210> 1973

<211> 1830

<212> DNA

<213> B.fragilis

<400> 1973

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tcatgttcag	accatattgc	cgattcgtct	gattttatctg	tacagacacg	tacaattgta	180
tctccggaag	gagttttctac	ttcaaataccg	gatctgatta	gtgattggga	acatcaatct	240
ttgcttacc	tttctactgg	tgaacggatt	aatactccat	ggacgcccgg	tgcatctcac	300
tctatgtcag	aagaaactgt	atcggatata	aaaaaagaag	atggatggac	tatgcttttt	360
catactttta	aggcattaaa	tgagtctccc	aacagcaatt	atctctgctt	ctataatgaa	420
ttgacaggag	ttattaaggt	gtttttattat	ataaaaaatg	ctcagggaaa	taacggattt	480
cagtggagaa	tcagcactgc	caatggggta	gggagtgtt	tattggcttt	gaacagttat	540
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caaacaccaa	ttaatggatt	gacaccggga	tggaatggat	ttgagtttga	agttccttat	660
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tataactata	agggcaaagt	acacaatgtc	tctatatccc	ggaattataa	ggtccaatat	1740
gtgcatgac	ctgctacaga	tgtaaaaata	cttgggtactg	ccggaactaa	aaaagtggta	1800

attgtgaata actatcccca atttgaataa

1830

<210> 1974

<211> 447

<212> DNA

<213> B.fragilis

<400> 1974

aaaaagatgg	gaaaaagtag	ttttttacaa	gacttttaaag	ctttcgccat	gaaaggaaac	60
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gtttagaccg	atatcattat	gccacctttg	gggttactca	ttgggggagt	gaactttacg	180
gacttgaaat	gggtaatgaa	agctgcggaa	tatggggctg	atggaaaaga	gacggccgct	240
gctgtgacat	tgaattacgg	caactttctg	caggcgactt	tcgattttct	tatcattgct	300
ttttctatat	tcttatttat	taaactgatt	acaaagttga	ctcagaagaa	agctgaggca	360
cctgctgcgc	cgcccgccac	tcctgcacct	acaaaagaag	agatattggt	gactgaaata	420
cgtgatttat	tgaagaaaa	gcagtaa				447

<210> 1975

<211> 417

<212> DNA

<213> B.fragilis

<400> 1975

aagcaaggcg	taccatcgga	agtgggggat	gtgccagtcc	gagcacatgt	gtttgcgaag	60
gagttttcat	gtgtagttag	gatgttaggg	ttgtatataa	aaaaagagaa	tctaatttct	120
cagattctct	ttagagcgga	agacggggct	caaaccgcgc	accctcagct	tggaaggcta	180
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gaagtcgaaa	gacagcagat	ttacagtctg	ccccatttgg	ccactctggg	atttgccttt	300
ttgtttgctt	ttgagtcctt	ttgctttctc	ttaagtaggt	ttgtttctca	attgcgatgc	360
aaagatacaa	ctatttattt	aaactccaaa	caaaatcgat	cattttttatt	gcagtaa	417

<210> 1976

<211> 201

<212> DNA

<213> B.fragilis

<400> 1976

agtcatttat	tccgatttac	gatagaaaat	ttagttgttg	aaatagcaaa	tatctctttc	60
attaccgtat	atgtattatg	gggggagaaa	ctggaacttt	cctttgatat	ctcgtagaaa	120
accaagatat	tgtggccttt	ccttcttcct	tcgggaaatg	cttgttttaa	ttctatgtta	180
aagcaagtgt	tctgtattta	a				201

<210> 1977

<211> 252

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (58)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 1977

cacttccgag	caggacagat	actcaggata	tttcctaaaa	aagtaacggg	taaagttnat	60
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gaaaacatct	cctatacttc	cgaccaaggc	aagacctatg	atttcaatac	tgacagacaa	180
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<210> 1978
 <211> 2091
 <212> DNA
 <213> B.fragilis

<400> 1978

aaagcattac	ttttgctcta	cttaaaaagt	aatcaaaagc	cgatgattaa	aaagatatta	60
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atgattgccc	gaaacgcgtt	atactttgag	gactatgtcc	tttccattca	gtatttttaat	180
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ttaggcaaat	tgcttgcaat	cgctccgaag	tatacaaggg	cttattttgat	gcgtggagaa	540
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atggataaat	atgatcctga	tgcttgggct	tcccgggcca	tcgtcagggt	gcagcaaggg	660
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<210> 1979
 <211> 1950
 <212> DNA
 <213> B.fragilis

<400> 1979

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gtactctata	agtgggaaga	tgaacaggga	aagcatgctt	tctggcacac	gagtgccac	240
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tgtgagctga	tttccgaatt	ggaagacgga	catataacta	catatacaca	aggtgatttt	540
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ccgtatatgc	tgattgtcgg	tgagaaaagaa	gccgaaaatg	gggaagtttc	tgttcgtcga	1860
cagggcgaag	gggacaaaag	aaccatgaaa	tttgaagaat	ttggtgaaat	tttgaacgaa	1920
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<210> 1980
 <211> 1266
 <212> DNA
 <213> B.fragilis

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cagttgtctg	acaccgcagt	ccaaatcggt	aaaccogaat	ttccacaaat	tgtacctttt	180
gaaacaggca	tcgaaacaga	acaagagata	ctattgagtg	agattgccga	ttcgattcgg	240
tacatcccgt	tggaacgaa	caataaatgc	ctgataagag	gggttaaagg	aagcaatatc	300
atccggacaa	agaatattt	cttctacca	tggatcgata	aattatttca	gtacacaaaa	360
gatggtaaat	tcatacggac	actggggcgc	aaaggcggcg	gaccgggtga	gtttaactgg	420
atcatgcaga	tcgatgtgga	tgaaaaaaaa	ggattggtct	acatgttaac	aactacgggg	480
aaaatcaata	tctattctat	ggaacaggt	aaattcatcc	gtgcaatgaa	agttccta	540
atagaagtaa	gtgagtttgc	gatgttacgt	gttcaggata	caattgctgc	aacattcatg	600
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agcagtgaca	tagatcggtt	tatgttccat	tacaaaagcc	atacctgtta	taaagaatat	780
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cgctttcagg	aagtagctgc	tccttacatc	caatacaata	ccatagagac	tgactcttac	960
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actccaggtc	tgccattacg	cccagataaca	gcacttgaca	gccatacgct	gttatatgta	1140
tgggaagctc	ctgaacttct	tgaaaaggct	gaaaaaactc	cttccatcct	ccaaatcgaa	1200
ccattaaaag	gattgaagga	agacgataac	ccggtaatga	tgatagtata	tttaaaacaa	1260
ccataa						1266

<210> 1981
 <211> 348
 <212> DNA
 <213> B.fragilis

<400> 1981	ttaaatttgg	tagacaataa	aaaacaaact	ggaagtaa	gttattttaa	gaagaatgac	60
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ggatgatgatg	tagaacctaa	agtatatccc	atcttttcagg	ctttaaaatt	ggctgaagaa	180
aaagaactgg	atctcgtgga	gatttctccc	aatgcccac	cacctgtttg	tcgtattatt	240
gactactcta	agtttctgta	tcagttaaag	aagcgtcaaa	aagaacaaaa	ggctaagcag	300
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<210> 1982

<211> 225

<212> DNA

<213> B.fragilis

<400> 1982

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aatgatttgg	tagaaagagt	agaagcagaa	gtgggttaatt	acaaccaa	ggttatcaat	120
cattctattt	ctccttttgg	aaatcctg	cagatcaaac	aattacgcag	gacgattgcg	180
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<210> 1983

<211> 441

<212> DNA

<213> B.fragilis

<400> 1983

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actaaatgga	tcacaggccg	acagattgaa	gctgctcgta	ttgcagtgac	aagatatatg	180
caacgtcagg	gacagatttg	gattcgtatt	ttcccggata	aaccgattac	tagaaaacct	240
gctgatgtac	gtatgggtaa	aggtaagggt	agccccgaag	gattcgtggc	tccggttaca	300
ccaggtagaa	ttattattga	agctgaagga	gtatcttacg	agatcgcgaa	agaagctttg	360
cgtttggcag	ctcagaaact	tccgattact	acgaagtttg	tcgtgagacg	tgattatgat	420
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<210> 1984

<211> 735

<212> DNA

<213> B.fragilis

<400> 1984

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tatcttaatg	caagacttgc	gaaagcaagt	gtatcaagaa	tcgtaattga	acgtacgctg	180
aagctcgtta	ctattactgt	ttgcactgct	cgctccgggta	ttattatcgg	taaagggtggc	240
caggaagttg	ataagttgaa	ggaagagttg	aaaaagggtta	ccgacaaaga	tattcagatc	300
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cgtcaggtag	aaggtaaaat	tgcctatcgc	cgtgccatta	aaatggctat	cgcaaataca	420
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atcgactatt	gccatgcaga	agcattgaca	aaagtgggtc	ttctcggtat	taaagtttgg	600
atctgtagag	gtgaagtttt	tggttaagaga	gaattagctc	ccaactttac	acaaagcaaa	660
gagagtggtc	gtggaaacaa	tggtggaaac	aacggcggcg	gaaagaactt	caaaagaaa	720
aaaaataatc	gctaa					735

<210> 1985

<211> 633

<212> DNA

<213> B.fragilis

<400> 1985

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ttaaacgaat	ctatcttcgg	aattgagccc	aatgaccacg	ctatctatct	ggacgtaaag	120
caattttatgg	ctaaccagcg	tcagggtact	cacaagtcaa	aagagagaag	cgaaatcagc	180
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gaagcaaata	aaaatgtata	tttgtcagct	cgtaacatcg	aagggtgctaa	cgttcagact	540
atctcaggat	taaatactta	cagagtattg	aatgctgggg	ttgttgtgct	tactgaaagc	600
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<210> 1986

<211> 273

<212> DNA

<213> B.fragilis

<400> 1986

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atttcgcctg	attttgtagg	ccatacagtt	gcagttcaca	acggaaataa	atttattcct	180
gtatatgtta	ccgaaaatat	ggtaggtcac	aagttgggtg	aattcgctcc	aactcgtaca	240
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<210> 1987

<211> 840

<212> DNA

<213> B.fragilis

<400> 1987

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ggtaaaaaat	catctggcgg	tcgtaacaac	gaaggtaaga	tgacaatgcg	ctacttaggt	180
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tatgctgatg	gtgaaaaaag	atatattatt	gctcccaatg	gattgcaagt	tggtgcgact	360
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ccggtcggta	cagtaattca	caacattgaa	ttgcgtccgg	gtcagggtgc	tgctctgggt	480
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cgtcgtcctc	gcaaccgtgg	tggtgttatg	aaccgcggtg	atcaccgat	gggtgggtgg	720
gaaggacgtg	cttcgggagg	tcacccaaga	tctcgtaagg	gattgtacgc	taagggaact	780
aagactagag	ctccgaagaa	acaatcgtct	aagtacatta	ttgagagaag	aaaaaagtaa	840

<210> 1988

<211> 294

<212> DNA

<213> B.fragilis

<400> 1988

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gttgaagccc	tttataatgt	tacggtagtt	gatgtgaata	ctgtgaagta	tgctggcaaa	180
aataagagcc	gttatacaaa	agcaggtatc	atcaatggtc	gtacgaacgc	ttttaagaaa	240
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<210> 1989

<211> 195

<212> DNA

<213> B.fragilis

<400> 1989

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<210> 1990

<211> 270

<212> DNA

<213> B.fragilis

<400> 1990

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ggtaagttcg	ttagcaaaac	gaagaagtac	catgctcacg	atgaaaagaa	tgaatgcaat	180
gtaggtgata	ctgtacgcac	catggaaact	cgtcctttga	gcaagactaa	aagatggaga	240
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<210> 1991

<211> 432

<212> DNA

<213> B.fragilis

<400> 1991

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gaagccctta	aaaccatgta	ttttgctaaa	ttgcaaaatg	ttcctacttc	tcctcgttaag	120
atgctgtctcg	tggctgacac	gattcgtggg	atggaagtga	acagagcact	tggcgttttg	180
aagttttctt	caaaaagaagc	agctgcaaga	gtggaaaaat	tggtgcgctc	tgcaattgct	240
aactgggagc	agaaaaacga	acgtaaagct	gaaagtggcg	aattattcgt	aacgaagatt	300
tttgttgatg	gtggtgctac	actcaaaaga	atgagaccgg	ctccgcaggg	aagaggatac	360
agaattcgca	aacgttcaaa	tcacgtaaca	ttgttcggtg	gttctaaaag	taataacgaa	420
gatcaaaatt	aa					432

<210> 1992

<211> 734

<212> DNA

<213> B.fragilis

<400> 1992

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acagatgatg	ttgccgaact	ccccttgga	gaaggggttc	cggttcgttt	tgaaataaag	180
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gaatatagtg	cagcccagaca	attggacgtc	aactcgtttc	cggcagtagt	cacgatgctt	360
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accaatgttc	ctgcgtatgt	caactctatg	acatgtcttc	accacggggc	tggaaggatc	720
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<210> 1993

<211> 1203

<212> DNA

<213> B.fragilis

<400> 1993

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aaattggtaa	gtacatcata	tgtatactct	gcactaatct	tttctggtat	attagtgata	180
tctttgatta	tcaattgttt	tattaaatgg	aatctacttt	tgaatgttga	gcaaataatt	240
aataatgac	taactataac	agcttttctg	gtaattatag	cattttgtgt	gaggtttata	300
cttcaaataa	taactccagt	attggctgcc	acgcaaaaata	taagatttaa	ttcattaata	360
gaatttattg	ggcaaattgg	ggcttttatt	ggggttatac	ttcttaatta	tttaggagta	420
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gaaggagcta	tttgagatga	gataaattgt	atctcattaa	gcgcttttct	atcccctatt	1140
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<210> 1994

<211> 186

<212> DNA

<213> B.fragilis

<400> 1994

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atttgttttg	ccatgaatca	ttattatctg	ttaaagttat	atcccgtcat	ccaattgttt	180
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<210> 1995

<211> 1152

<212> DNA

<213> B.fragilis

<400> 1995

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ttcggttttc	taagtaatca	tgtttatagt	caagttgaaa	tagagaaatt	cccttcta	180
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tatccagagt	ctcctgtttt	tgatataaat	actgttaaaag	ataagatacg	tttttgcttg	420
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gaagatgtgt	ctaactcgatt	aaagaaatat	ttgggaatat	cctctgatag	agtatatact	540
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cggaaagtat ga 1152

<210> 1996
<211> 1224
<212> DNA
<213> B.fragilis

<400> 1996
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cctgggcac cctataaaac attgtctttt ttatgcttat tcaactatgg ttttcattta 180
aatgttggac gaggtgttaa gcgggtagat agttccattt tcgctattgt cttgttgcaa 240
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atacaactta tttcgtttgtg cattattata tcctatatta agatctatgt cggatttgat 360
gtttttgtga agtcatttat ctggataatg ttaattatgg gtgtcgggtg aaccttgacc 420
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gtaactatat tcactttctc aatagcattt tatgtaacaa tattttttta ttttttattc 720
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tgttatcttt ctttgcagaa tagtaatggg ggctctcttg gtacaatata caaactgaca 840
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cgaaaattat tttttaaaat atatatgttg atacttttga ctttttttta tagaccagaa 1140
ctttcttctg ttatggtact tttagtcttt tatatgctta ttgattatat aaaaagtaag 1200
aaatatttaa attgtaagaa ctga 1224

<210> 1997
<211> 282
<212> DNA
<213> B.fragilis

<400> 1997
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gacgagaatg tttacctccg tggatttggg agcttcgctg taaagaaaag agctcaaaaa 180
accgctcgta atattttctaa gaatacgact atcatcatc cggaacacaa cattccggcg 240
ttcaaaccag ctaagacatt caccctttcg gtaaagaaat aa 282

<210> 1998
<211> 930
<212> DNA
<213> B.fragilis

<400> 1998
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attattatag ttgataactg tagtacagat ttaacttgga gtattttgaa tacatgggca 180
agcaaagatc atagaattaa aatatatcag aataaaaacta atataggacc tgttttaaat 240
tggaatgaat gctttaagca tgcttcaggg gagtatataa agattccttg gtctgatgat 300
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gttatatcaa atcataagat cgtatcagaa aatgggtattg tagataatgt aaagtataag 420
aaacaaaaat atacaagaaa agagtatctg tataatatat tatttcaaaa tattgagaaa 480
ttcccattat ctctggatg tgctcttttt agaacgaaag atttgaatga taactttgtt 540
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aaaaaaataa	tgttttggca	acaaataaat	aaaggttaata	agatttatca	taattttatat	840
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<210> 1999

<211> 966

<212> DNA

<213> B.fragilis

<400> 1999

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atgaataatt	tggtgtccat	ttttataacct	acttataata	ggtgtaaatgt	tttagataact	180
gttttagatc	gtgtcattag	ttctgtaaaa	gaatatgatg	tttgtgtaca	agtgtatgat	240
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aatctttttt	ctttaagaaa	tatttggtct	ttatataggg	gatataattt	taagagttta	900
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<210> 2000

<211> 951

<212> DNA

<213> B.fragilis

<400> 2000

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acactgcggg	gtggaggaat	tatcttctac	ttgggtgcat	tggcttattt	tctgacaaat	180
cagtttgagt	acctttgggt	tatgttggct	ctcactctgg	tgacgggtgat	cagctttgta	240
gatgatatcc	gctccatata	acaaggactt	cgtcttgggt	ttcattttac	ggcgatgggc	300
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<210> 2001

<211> 963

<212> DNA

<213> B.fragilis

<400> 2001

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aaaagattct	cttggacaga	atttgaacct	tctgcttttc	ctcttcaaac	tctgcctaag	180
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<210> 2002

<211> 762

<212> DNA

<213> B.fragilis

<400> 2002

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gatgcaatga	ataaaggatt	ggctattttg	aaagggtgaat	ggattaattt	tatgaatagc	300
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aaatttcata	ttttgtatgg	taaaacagta	gtaaaggaaa	caggaagagt	cattgtacct	420
cctttgaaaa	ttagaaaaaa	gtatttttta	cttgatacta	tctgtcatca	gagtattttt	480
tttaatcgat	ctatatttat	ggatttaggt	aottatagtt	tagattataa	aattatagct	540
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gttggtttcct	tgtgggagtc	tttgggggtt	tctggaaata	atthtgaaatt	atttaaaaaat	660
gaagagaaaat	tgttggttaa	tagaaatttc	aatactgttg	aaatctattt	tattcgtata	720
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<210> 2003

<211> 720

<212> DNA

<213> B.fragilis

<400> 2003

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acggaacata	agaagaagtt	catgatccgc	tatttgctgc	atccggactt	tgtgatgacg	660
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<210> 2004

<211> 1215
 <212> DNA
 <213> B.fragilis

<400> 2004

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<210> 2005
 <211> 1362
 <212> DNA
 <213> B.fragilis

<400> 2005

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ctcctgctcg	cctcgggctt	tgcttcggca	tccgaaatcg	ctttcttctc	actttcgctt	180
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tatcatcgat	acgaatttga	agtgcctggc	atggatagcc	ggagaatcct	gaaagtgaag	1320
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<210> 2006
 <211> 195

<212> DNA
<213> B.fragilis

<400> 2006
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<210> 2007
<211> 1113
<212> DNA
<213> B.fragilis

<400> 2007
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<210> 2008
<211> 471
<212> DNA
<213> B.fragilis

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<210> 2009
<211> 315
<212> DNA
<213> B.fragilis

<400> 2009
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<210> 2010

<211> 234

<212> DNA

<213> B.fragilis

<400> 2010

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<210> 2011

<211> 2346

<212> DNA

<213> B.fragilis

<400> 2011

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<210> 2012

<211> 789

<212> DNA

<213> B.fragilis

<400> 2012

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<210> 2013

<211> 333

<212> DNA

<213> B.fragilis

<400> 2013

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<210> 2014

<211> 957

<212> DNA

<213> B.fragilis

<400> 2014

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 <212> DNA
 <213> B.fragilis

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<210> 2016
 <211> 765
 <212> DNA
 <213> B.fragilis

<400> 2016
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<210> 2017
 <211> 1581
 <212> DNA
 <213> B.fragilis

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<210> 2018

<211> 900

<212> DNA

<213> B.fragilis

<400> 2018

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<210> 2019

<211> 876

<212> DNA

<213> B.fragilis

<400> 2019

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<210> 2020

<211> 372

<212> DNA

<213> B.fragilis

<400> 2020

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<210> 2021

<211> 207

<212> DNA

<213> B.fragilis

<400> 2021

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<210> 2022

<211> 1584

<212> DNA

<213> B.fragilis

<400> 2022

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<210> 2023

<211> 624

<212> DNA

<213> B.fragilis

<400> 2023

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gataatgtag	aaattaatga	ttttgtgcat	attgctgcaa	gattatctgt	tcagataggg	300
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<210> 2024

<211> 1008

<212> DNA

<213> B.fragilis

<400> 2024

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gaagagggac	gtgaaccggc	ccggcgtatc	taccataata	tgctgcgtac	gctcagggag	180
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<210> 2025

<211> 1590

<212> DNA

<213> B.fragilis

<400> 2025

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<210> 2026

<211> 207

<212> DNA

<213> B.fragilis

<400> 2026

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<210> 2027

<211> 315

<212> DNA

<213> B.fragilis

<400> 2027

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<210> 2028

<211> 918

<212> DNA

<213> B.fragilis

<400> 2028

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<210> 2029

<211> 225

<212> DNA

<213> B.fragilis

<400> 2029

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accaagtgtg	agaatctaaa	aaataattgt	gtacatttgc	aaaagactaa	cttcaatgcc	180
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<210> 2030

<211> 1530

<212> DNA

<213> B.fragilis

<400> 2030

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<211> 1089

<212> DNA

<213> B.fragilis

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<210> 2032
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 <213> B.fragilis

<400> 2032						
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<210> 2033
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 <212> DNA
 <213> B.fragilis

<400> 2033						
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<210> 2035

<211> 684

<212> DNA

<213> B.fragilis

<400> 2035

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aatgaagatt	atgagaagtt	gtttccatcc	aaagagatag	agaaacctga	aaacaagcgc	180
ggagagtgtc	ttgtacaatt	gtgtgatccc	gatcaggcat	tgagagaacta	taaatatccc	240
ggtaccgaaa	ctccgaatgg	tgctgaccaa	tataaaataa	ccctgatgtg	ttcgtttcag	300
gaaaaacgct	gggatggtaa	tcttactaaa	gatgtcagtg	ctcagtacaa	agtgaaatat	360
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ggagaggatg	ctgacggatt	aagacccaat	gtaatgttta	acggcgagaa	gttggaatt	480
tcttttaatt	tacattcggg	ttttcctctg	tatctgagtg	tttccggtga	gggaccaga	540
tcaccaata	taagagcaag	tatcacagct	gtctccactg	atggactggt	cgaattccc	600
agcctgcaga	cagagcaata	tcaaatgag	gaggggatta	atccactgag	gtatccatat	660
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<210> 2036

<211> 1941

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (11)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2036

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ttggcaatgg	tgcgtcacgc	cgtaaccaag	agttcacatt	ttattgctga	agcatccaat	180
gtggtacagg	cttttcgtgc	caatgagact	ccttaoctag	ccagagaaaa	catttatcta	240
ttgaagaata	aagacgatcc	gatgcaactg	cccggggtag	cattgacaca	tggggggata	300
ttcaataaga	cggaaacttc	cttgcggaagc	tatctgggac	gtttggcttt	ggattataac	360
aggcaactga	gtgaacataa	catacgcgct	ttcggattta	ctgaaatacg	atatgccgat	420
cgcagcatga	atcctttttca	aggctatgga	atacaatacg	acagaggtaa	tcaggtcttt	480
tccaatcccc	tgattttttga	aaagctggcc	aatgaaggag	atacttattt	ttctttaacc	540
gaacgttatg	aaaggggagt	gacattatcg	ggcagcgcta	catacggata	tgccgggaaa	600
tacattttca	atggagtatt	caattacgaa	ggggctaata	ctgcaggtaa	atatagccgt	660
tcccgctggc	tgccaacctg	gaatatagga	gccaaatgga	atctggatca	ggagaagttt	720
atgagaaaaa	acactacct	ttcaaggctc	gccttgcgta	cgagttatgg	gttaaccgct	780
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acatgggaaa	aaatgtatga	gttgaaactc	ggtcttgagc	tcggactggt	tggcaatcgt	960
atcagtgcga	cattcgatgt	gtaccaacga	aactcgtttg	atctgataga	ccttattcgt	1020
acctccgggtg	tgggaggtca	gtattacaaa	tacgctaatt	tcggagatat	gcgtacgctg	1080
ggagtggaa	tggccataca	gacacaaaat	atattgactg	acaaattcag	ttggtctacc	1140

acagtcacta	tcagcgggtat	gaagcagaaa	ataacccgggt	tactgaatac	ccctaacact	1200
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tattcaaaat	cataccttat	ttaccatggc	cctattgaac	cccaatatat	aggaggtata	1440
tccaataactt	ttaagtataa	aaattgggaa	ttctcgtgtt	ttgtttaccat	gcaggcaggt	1500
aataaaattc	ggatgaatcc	ttctttttgat	ccggcatttg	cogatcttaa	tgtattttcc	1560
aaggagtact	acaaccgttg	gttgaatccc	ggtgacgagc	ggaaaaccaa	tattcccgtg	1620
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tcgttgggat	atcgtttacc	tcaaagattc	ctttcacatc	ttaaaatcaa	acagatgaac	1800
gtaaaggtga	atgtgacgaa	tccgttcctt	atctattcag	acaggaaact	gaatgggcaa	1860
gatccggaat	tttatagatc	aggaggggtt	tcattgccta	ctcccaagca	atatacgatg	1920
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<210> 2037

<211> 741

<212> DNA

<213> B.fragilis

<400> 2037

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gatatagaag	atattcaggt	attgaaagac	gcctcggcaa	cttccatcta	tgggtgcccg	180
gcattgaacg	gagtgatcgt	aattaccacc	cgggtccggt	aaagaaatgc	accgaacaga	240
ttttcttatt	cttatgagtt	aagtatgcga	tctattcctt	cttatacaaa	tttcgatttg	300
cttaattctc	aagagagtat	gtctgtttat	caagagatgg	gcagaaaggg	atattttctct	360
ttgcaaaaata	cgctatatgg	tcgtcgcagc	ggagtataat	atcagatgta	taaggcactt	420
aataccattg	atccggctac	cggccaatat	tatctggaga	atacggatga	tgtcaaaagg	480
gcattcatgc	gtgaaagaga	gtatgctaac	accaattgggt	ttaaagaact	gtttacacat	540
aggcctatcc	atacacatac	tgtgaccttt	tcaggggggag	gggagaactc	tgcaatgtat	600
gcttccatcg	gttttttatga	tgacagagga	tggacttttg	ccgacaatgt	taaaagaatt	660
acggccaaca	tcaagaactc	tttttactgg	aacgaagata	agataaaggc	tactatatcc	720
gcacaaggga	aatctacgta	a				741

<210> 2038

<211> 513

<212> DNA

<213> B.fragilis

<400> 2038

gaaagcttat	ctttatgtca	tatagattgt	gtatctttgc	acgcgaaaac	aaaaaaggat	60
aatatgtgtg	gaatcgtagg	ctacattgggt	aagagagaag	cctaccccat	ccttatcaag	120
gggctgaagc	gactgaagta	tcgcggatac	gacagcgccg	gggtagcgat	catcaacgac	180
aaccagctgt	taaatgtata	tcggccgcaa	ggcgaaacgt	tcgtgtttgc	ttctgacggc	240
attatcgaga	ctcccaccgt	tatcctccaa	gaatttccat	cccaaagtta	catcttccgt	300
aacagtacct	atacagaggt	acccgtttat	tccttttctt	ctttccgccc	gatgcatcag	360
ttttgtaaga	taacggcttc	tcgtgcagtg	aggccggaaa	cattaaagtg	ctctgattcg	420
ttgataatta	gagaggcttt	ttctgacaca	ctgttgcaag	gcgggaaaga	tgaagcgacc	480
gggataaggg	aagagagtgt	gactatggag	tga			513

<210> 2039

<211> 339

<212> DNA

<213> B.fragilis

<400> 2039

aaacataaat	cctttaaaac	aattacaatt	atgtgtggaa	tagcaggaat	cttcaatata	60
aagattcaga	gcagggaact	caggaacaag	gctctccgaa	tggcacgcaa	aatacgtcac	120

cgcggggcccg	actggagtg	aatgtattgt	ggcgggaagt	ccatcctggc	cacacgagcg	180
cctttccata	gtcgatccgc	aaagcggagg	acagcctctt	ttattcatcc	gaccggaagc	240
aagtactggc	ggttaacggc	gaaatctata	accaccgtga	catccgcgcc	caatatgccg	300
gccgctacga	gttccggacc	gggagtga	gtgaggtga			339

<210> 2040

<211> 570

<212> DNA

<213> B.fragilis

<400> 2040

gatatgaaat	caatgaatta	ttctcttata	cgcactat	gtgcgctt	catcggtctg	60
gtactggtag	tctggccgga	tgcggcaatt	aactatattg	tcataaccat	cggcgctcctg	120
ttcctgattc	cgggatttat	tgtgctgata	ggctatttctg	gaacaaagcc	ggaaccgggt	180
gtgtcccgcc	gtttcccat	cgaggagtg	ggcagtcctgc	tattcggact	ttggctggtc	240
acgatgccgg	ggttctttgc	cgacgtactg	atgttccctgt	tgggctttat	cctgattatg	300
ggaggtgtgc	agcagattgc	ctctctttctg	atggcacctg	gttggacgcc	cgttccggga	360
ggtttctatg	tgataccggg	cttgatcctg	atagcgggta	tcgtagccct	gtttaatcct	420
accggagcac	gtaatacggc	ctttatgatt	atcgggtgtca	gtagtttggg	ttatgccgtc	480
tccgagctga	tcaactgggt	caagtttgcc	cgcgcgtcgtc	ccaagactcc	cctgaaagga	540
gagattgagg	atgcggagat	tatcgaataa				570

<210> 2041

<211> 663

<212> DNA

<213> B.fragilis

<400> 2041

gactcagtgt	cactctgtgg	tgaacccaac	tttaaacc	aaatgatgaa	cgacaaatta	60
ataaaagtct	gcgggatg	cgaagctgaa	aatatctgtg	aggtagagca	actaaagggtg	120
gacatgatag	gctttatctt	ctatccgaaa	tctccccgtt	gcctctacga	acttctctgcc	180
tacatgccgg	tcaaagcaaa	gcgtgtcggt	gtctttgtca	acgaagacaa	aaaggagatc	240
gaaatatattg	ccgaccgttt	cagcctggat	tatatccagc	tgcatggcaa	tgaatcgccg	300
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gacaccaa	gcgaacaaca	tggcggctca	ggaaatcagt	tcgactggag	catgttaaac	480
agctataaag	ggaaaaagcc	ttttctgctt	agtggaggca	tcaatccata	cagtccgccg	540
acactgaaag	agttgcgcca	tccacaactg	gcaggcttcg	atctgaacag	ccgtttcgaa	600
acaaaaccgg	gattgaaaga	tgtggaaaga	ctcaggcact	ttctggagga	actgaggaaa	660
ttaa						663

<210> 2042

<211> 2325

<212> DNA

<213> B.fragilis

<400> 2042

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gccctgttgc	ctgctatggc	cgaccaaccg	gaacatccgg	aactgaaagc	gtctgatgcc	120
aatatcatcg	gccatgtact	cgataaaaaa	acaggtgaac	acctctctta	tataacaatc	180
gccctgaaag	gaactaccat	cggtagcgtg	acggatgcca	ccggacacta	tttctgaaa	240
aaccttcccc	aagggaattt	tgtgctcgaa	gccagttcgg	tggggtataa	aaccatcagt	300
cgcaatgtca	gtctcaggaa	aggaaagaca	cttgaagaaa	atthtgagtt	ggaagaagat	360
gccgtagcgc	ttgacggagt	ggtagtgtcg	gccaatcgca	gcgtgaccaa	acggcgcttg	420
gcacctacat	tggatcaatg	ggtagatatg	aagatgtttg	agaatacaaa	ctcgccctaca	480
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ggtttccagc	aggtgctcat	caatggactg	gacgggtccg	atacacagat	tcttatcgat	600
tcgcgtccca	tcttcagtgc	cctttccggg	gtttacgggt	tggaacagat	tcctgccaat	660
atgatcgagc	gggtagaggt	gatgcgaggc	ggaggtttctg	ccctgttcgg	ttcgtccgct	720

attgccggaa	ccattaatat	catcaccaag	gagccattgc	gcaattcggg	gcagttggca	780
catactctta	cttctatcgg	cggcagctcg	tctttcgata	ataatacttc	gctgaacgca	840
tcgctggtga	ccgatgatca	tggggcggga	ctttatgtgt	tcggacagaa	ccgtcaccgg	900
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gtcggcttcc	gttcgttcc	caagacaagc	acttattcta	agttgacatt	tgagtatcat	1020
cacttacagg	agtttcgtcg	tggcggaaac	ctgctgaacc	gtccgcctca	cgaggctgac	1080
attgccgagc	agattcagca	ctccatcaac	ggcggcggct	tgaaattoga	ttattttgct	1140
ccgaatgaaa	aacaccgtct	gaccgtttat	acttcggcac	agcatacggg	ccgcgacagt	1200
tattatggca	gcaaaaaaga	ccagaacgcc	tatggaaaga	caacggacct	gacatttata	1260
ggcggttctc	aatatgtgta	cagtttcggg	aaatgccttt	tcatgcctgc	cgacctgact	1320
gcgggattgg	agtataaccg	ggataacctg	aaggacgata	tgtggggata	caaccgttat	1380
acgaagcaga	cggtaaata	tggtagtgct	tttttgcaga	atgaatggaa	aaacgagaaa	1440
tggagcattc	tgttggggcg	acgtctggat	aagcacaatc	tgatcaacca	tgttatcttt	1500
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gcttatcaga	acgatttcga	ccagggagtg	gagcgtgact	ccggatatat	ttatggtccg	2280
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<210> 2043

<211> 645

<212> DNA

<213> B.fragilis

<400> 2043

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ttctctttcc	tctacctaaa	acgtggaaaa	ggctctgtga	tttaccgtag	cgtacgccag	180
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aacaccatta	tccgccccgc	aacctatggc	aacctgtaa	acctggcaca	gaatgtaacc	360
gtaaccggcc	tgaaccataa	ttatcaggac	acaggcaagc	ggatagacga	acaaggagta	420
agcacacaac	ccatcacgat	tgaagatgat	gtatgggtag	gtgccaatc	ggtaatttta	480
cccggtgta	cactgggcaa	acattgcgta	gtagctgccg	gaagtgtagt	cagtcgctcc	540
atccctccct	actctgtctg	tgcgggcagt	ccggctaaag	tagtcaaaca	gttcaatccg	600
gagagccgaa	cctgggaaaa	aacagtctca	aaaaacggaa	agtaa		645

<210> 2044

<211> 633

<212> DNA

<213> B.fragilis

<400> 2044

caatcgcccc	ctccccctcc	catttatagt	gatagctacc	ctgctatttc	cattataaat	60
ggggattttc	tatttctgcc	ggaccgccta	tctttgcogt	atcattttaa	aacaagatca	120
gaaatgaata	agattggagt	atcttacggt	tcacaacgg	ggactaccga	agatgtagcc	180
caccggattg	cagaaaaact	gaacgttccc	aatggtgaca	tcacgatgc	ctcaaaactg	240
aacgacgagt	tagtgaaaga	atatgatgta	ttagtactgg	gcacctctac	gtggggagca	300
ggcgagcttc	aggatgactg	gtacgacggg	atcaaagtgc	tgaagaaggc	tgacttgtct	360
cacaaattcg	tagccctctt	cggctgtggc	gattcagact	cttacagtga	caccttctgc	420

gacggtatcg	gcattcttata	cgaagaactt	aaagacaccc	actgcacctt	ctgccccggca	480
accgatccgt	cgggctacac	attcgactct	tctgttgccg	taatcaacgg	caagtttcta	540
ggacttcctt	tagatgaagt	gaacgaagat	ggcaaaaacc	acgagcgtat	cgttcaatgg	600
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<210> 2045

<211> 1461

<212> DNA

<213> B.fragilis

<400> 2045

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gccttcaatt	ataccaccca	tagcaagcaa	gtcctggggc	acctgcacac	tccggttaagc	120
atttacctca	aagtacgtga	tatgtatccg	caatccgcat	taatggaaag	ctcggactac	180
catgccggag	aaaactctct	ctcgttccat	gccctctgcc	cactggcaag	catcggcatc	240
aacagtggaa	tcgtaaccac	tacttaccac	gacaataccc	gccgggaaga	accgctcagc	300
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gaacacatcc	ccgtgaaaga	aagtcacgac	gaacagaatg	acgtcccgga	cttactatac	480
atattatata	agtatatcat	cgtcttcaat	cactttaaga	atgaactcac	tctggtagag	540
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cgtgccatgc	agcttatcag	cgaatataga	cctcacaacc	gcggagccta	cggaggttgt	1260
atcggcttca	tccgcttgaa	cggagaattg	aaccaggcga	taacgatccg	cactttcgta	1320
agccgcaaca	acgaattgtg	gttccaggcc	ggaggcggta	tcttagcacg	cagtcaggac	1380
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<210> 2046

<211> 210

<212> DNA

<213> B.fragilis

<400> 2046

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aaaaatcttt	acctaattga	aaatcacttg	aaacttttta	ataccttaaa	tctttatcta	180
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<210> 2047

<211> 1023

<212> DNA

<213> B.fragilis

<400> 2047

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cctccgttca	aagtagacgt	tgcgggtact	tttcttttgc	ccgctgcatt	gagagaagcc	120
cgtgagcaat	atcgaaacga	acaaatcagc	ctgctgacct	tgcgtgctgt	cgaagatgcc	180
gagatacggg	atctggtaga	cagactgaag	gcagaagggg	tgaagggtgt	cactgacggc	240
cgtttccgca	gtgatgcgtg	gccgctcgac	tttatgtgcg	gattggatgg	tatccggttc	300

cgggatgaca	gaaagacctc	tgtcgaactg	accgggtcgg	tcgatgtaca	tcaccatcct	360
gtgctcgatg	atcttgtctt	tcttaccggg	gtgaccgggtg	gagatgtaat	agctaagcaa	420
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aaactgatta	tggaaactgta	cagatcggg	tgccgttatc	tgcaactcga	tgatgcaacg	600
cgtacgggtga	cggataacgc	gatccgtgtc	aacaacatgg	cattggagaa	tcttcccgcc	660
gatcttttca	ttgcttttca	ttcacctacc	gagatgcttt	tctcgctaca	gggaattcat	720
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<210> 2048

<211> 1350

<212> DNA

<213> B.fragilis

<400> 2048

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<210> 2049

<211> 2442

<212> DNA

<213> B.fragilis

<400> 2049

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<210> 2050

<211> 306

<212> DNA

<213> B.fragilis

<400> 2050

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<210> 2051

<211> 1341

<212> DNA

<213> B.fragilis

<400> 2051

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aatgcgtcga	aaggttatct	gcctcagttt	accctttcgg	gtaaggccag	ttggcagagt	300
gaggttacgg	aattgcctgt	acaggttccc	ggagtagata	tcaaagggtt	gccgaaagac	360
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<210> 2052

<211> 1296

<212> DNA

<213> B.fragilis

<400> 2052

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cctgccaaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
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<210> 2053

<211> 1155

<212> DNA

<213> B.fragilis

<400> 2053

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cacggtaagt	cgttcgggta	cgaaaagccc	gtggcagggtg	aagtagtggt	caataccgcc	180
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<210> 2054

<211> 696

<212> DNA

<213> B.fragilis

<400> 2054

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cggacgtacg	acgtacatgg	cattcagttt	catcccgaat	cggtgctgac	tccacaggga	660
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<210> 2055

<211> 294

<212> DNA

<213> B.fragilis

<400> 2055

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<210> 2056

<211> 1497

<212> DNA

<213> B.fragilis

<400> 2056

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<210> 2057

<211> 1089

<212> DNA

<213> B.fragilis

<400> 2057

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<210> 2058

<211> 1161

<212> DNA

<213> B.fragilis

<400> 2058

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atcgtgaga	aatatgacat	agtgattctt	ttcgagcaac	ggatcatctc	aaaagacatc	180
cccgaaatcc	aatatctgag	aaagaaattt	ccgggagtat	atatcgctct	cgttacagag	240
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gccccaaact	tttctttctt	actcgacatg	gagattatcc	taaggacttt	caccgcgttt	1140
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<210> 2059

<211> 423

<212> DNA

<213> B.fragilis

<400> 2059

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<210> 2060

<211> 903

<212> DNA

<213> B.fragilis

<400> 2060

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aaagaatggg	gagcgactcc	acacaacatc	agccacaact	tcggacttaa	atataatattc	900
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<210> 2061

<211> 1206

<212> DNA

<213> B.fragilis

<400> 2061

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<210> 2062

<211> 273

<212> DNA

<213> B.fragilis

<400> 2062

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ggaggattcc	tgtattggaa	atacgtagg	tgcaccagcg	gaacttgtec	cattacctct	180
tcaccggtca	acagtaccct	ttggggagct	gttatgggcg	gcctgctctt	gaatcttttt	240
aaaacagaca	gtaccctcta	aaaaacaaac	ttaa			273

<210> 2063

<211> 252

<212> DNA

<213> B.fragilis

<400> 2063

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ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 2064

<211> 315

<212> DNA

<213> B.fragilis

<400> 2064

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gaaggaggta	gtagggtgtg	tgtatccggt	agagaggtag	ttcggttggg	gggtgaattg	180
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<210> 2065

<211> 1149

<212> DNA

<400> 2065

<210> 2066

<211> 3255

<212> DNA

<213> B.fragilis

<400> 2066

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<210> 2067

<211> 1188

<212> DNA

<213> B.fragilis

<400> 2067

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<210> 2068

<211> 942

<212> DNA

<213> B.fragilis

<400> 2068

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<210> 2069

<211> 1518

<212> DNA

<213> B.fragilis

<400> 2069

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gcaacggctg	tcagtgcaga	acagatggca	catgccgcag	aacgttttcc	catccacacc	1320
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agcgccgccc	gcagcgtgcc	cagtatcccc	agcgtagcct	gttcgacagc	cgaggcactg	1440
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<210> 2070

<211> 855

<212> DNA

<213> B.fragilis

<400> 2070

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gaaaaactga	tccggctgat	gaaagcctac	aagcaactga	tgaaaatatt	cgaagtttctg	180
gattaccgtg	cctgcgccac	atctgccatg	cgcatgcac	gcaacggaaa	agaaatcacg	240
cgcaagatag	aaaagaaaac	cggtatccgc	gtcgaaatca	tcgacggtca	ggaagaagcg	300
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gtcgatgtcg	gcggcggcag	cacagaaatc	aatctgatct	gtgactccga	actcaaaagt	420
tcacgctcct	acaacatcgg	aaccgtgcgc	atgctcagcg	gcatggtgaa	aaacgaagaa	480
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gcagcggaaa	tttttctgga	agtggcaaaa	caagtaaattg	caacgggaat	cacagtcccg	780
acaatcggac	tgtcggacgg	tatcatcgac	agcctctata	ccaagaatat	gcgcattgaa	840
acggacgcta	aataa					855

<210> 2071

<211> 996

<212> DNA

<213> B.fragilis

<400> 2071

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acaacagatt	tcattcttatt	tctatgcttc	agtctgatga	ctgtttatct	gggagttttg	180
gcaatagcag	cttctctaag	aaacgacact	ccatatcccc	aagcaggaaa	aagacataga	240
ttcgccattc	tggttcccc	gggtagcact	tccctcccct	tacccatta	tccggaagag	300
ctatatcaag	tattcaactta	tgaagatctg	acagaagcta	tagccgcact	gaatgaaaat	360
gatttcgatg	gtgtagtctg	cctgggagaa	accacccgga	tcgaacctgc	cttcctggag	420
gaaatcaaca	gcgttttoga	tgcggcatc	caagccattc	aactccgtca	catcacggaa	480
aaacgttcga	cccgcaaaac	atactttcag	gctctgaacg	aagaaatcac	tcaggccctg	540
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ctgtctctga	agtgggtggag	cttactttat	atactgatgt	tcattcatttg	tctggctatc	960
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<210> 2072

<211> 498

<212> DNA

<213> B.fragilis

<400> 2072

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gccgaaaagc	cacaatcggg	caccattcac	ctgacccgtg	cggaatttct	gaaaaagata	180
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tccaaagagt	atgccggaaa	gatttatatc	tataaagtaa	atgtcgataa	agagccggaa	360
ctggcaagag	actttgggtat	tcagagtatt	cctaccattt	ggtttgtgcc	gatgaaaggc	420
gaaccccagg	tcaatatggg	agctttatcc	aaggagcaat	taaaaggata	catcgataaa	480
gtattattga	aacaatga					498

<210> 2073

<211> 846

<212> DNA

<213> B.fragilis

<400> 2073

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gccaataaac	gttttgagat	cgacctgcag	aaacaggcca	tcccatcgga	acagcttcag	120
gagaagttat	ctgacgaggt	acagccgggc	tactccatga	agcaggcact	ggcctcttcg	180
gctaccggta	tcattgccga	gttcaaacgc	cggctctccg	ccaaaggctg	gatctataaa	240
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atactcacgg	atgaaaaatt	cttcggagga	agcctgaagg	atattcgcac	agcacgccct	360
ttggtgaata	tcccgatcct	gcgcaaagat	tttataatcg	atgaatatca	actgttccag	420
gccaaaattg	tgggagccga	cgccatattg	ctgatagccg	cgcactgga	ggccgatcaa	480
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aacctgggca	ctttcttcac	agatgtagag	aattctttcc	ggttagccgg	acagttgcct	660
caggatgcmc	tgtttggtatc	ggaaagcggc	atctcggatc	cggaaacagt	gaaacgcctg	720
cgtaaagccg	ggttccgggg	attcctgata	ggagaaacgt	ttatgaaagc	ccaacagccc	780
ggacagaaat	taaaagaatt	tataaacgac	ctgaattcac	cacagagtga	cacagagtct	840
cactga						846

<210> 2074

<211> 717

<212> DNA

<213> B.fragilis

<400> 2074

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atcgggtgata	attattctct	tttacaagtt	atgagccggt	ttggactttc	gctgggggtt	120
ggtgacaaaa	cggtgaaaga	agtctgcgaa	atgaataatg	tcgattgtca	gacgtttctg	180
gtagtcgtta	acttcatggc	cgagggattc	tcgcgtatgg	acggcagtg	cgacgatatt	240
tcgataccgg	ccctggtcga	ttatctgaga	caggcgcata	tttattttct	tgattactgc	300
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aagaacatta	ttattaaata	ctgtcctgcc	aaggccaata	ccaatgtgct	gaatgctgcc	600
ttgttcgata	tatatgcttg	cgaagaggga	cttgaatcac	attgcaaagt	agaagattat	660
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<210> 2075

<211> 798

<212> DNA

<213> B.fragilis

<400> 2075

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aaacatggag	tgaacatgat	tgaaatcgg	attcctttca	gcgatccgat	ggctgacgg	180
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cgtgccgctt	gcgaaaatgc	ctcgggagcc	atcatcggca	gccgttttgt	cactctgctc	720
catgaagaga	agaaccggga	gaaagcaatc	acacgcttaa	aagctatttt	gaatttatca	780
tccaatgatt	tgagataa					798

<210> 2076

<211> 1167

<213> B.fragilis

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tgggtgaatg	aagacggaag	cttatctggt	gtacacatgc	ctttcgagga	agggtgagccc	600
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caggatgaac	agaaactcaa	ggaactggcg	gctactttga	ctgagaatga	taataatggt	1140
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 $\langle 211 \rangle$ 222

<213> B.fragilis

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agattaacac	agattattta	tcgtgttgat	tcatgggtata	aaagaatcta	tgcaaagtgtg	180
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 $\langle 211 \rangle$ 810

<213> B.fragilis

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gtcattgcc	atcgcggtt	ctggaaaacc	gaagggttctg	cgcaaaacag	tatcgccgcc	180
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gaatggattc	aggaatgcc	tgatttgggc	atgaaagtga	atgcctggac	cgtgaacaag	720
acggatgaca	tgaaatggct	gatcgatcgt	aaagtagatt	tcaccaccac	caacgaaccg	780
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<211> 1884

<212> DNA

<213> B.fragilis

<400> 2079

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gaaaagcagc	ataaccgtgg	tcaggaaggt	gccggtctgg	cgtgtgtgaa	actggaagta	180
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agtggcaact	atcctacacc	ggcgggggtg	aagctgctga	acgaagcatt	tattaactac	1860
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<210> 2080

<211> 1059

<212> DNA

<213> B.fragilis

<400> 2080

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<210> 2081
 <211> 360
 <212> DNA
 <213> B.fragilis

<400> 2081
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 gagaagcaag tttccgaggt gattaaagtg aatatcgtgg aggacaaggc agtggcagat 240
 tcgttcaata tcgagacagc cccggctttt attctcttgc agcgcgggca cgaattgttg 300
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<210> 2082
 <211> 2079
 <212> DNA
 <213> B.fragilis

<400> 2082
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 gccgcacaaa acggaaaaaa agtaacgggt atcatcgaat tgctcgcccg tttcgacgaa 1260
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<210> 2083

<211> 228
 <212> DNA
 <213> B.fragilis

<400> 2083

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ttgatgggtg	ctcccgtgcg	gcgtgtgggtg	cgggcaatcg	ggtcgatata	cgcctgtccg	180
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<210> 2084
 <211> 1644
 <212> DNA
 <213> B.fragilis

<400> 2084

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tgcttgtatc	actttgtcgt	atacaggcgt	aagcacttcg	atgcggttgt	ccagattgcg	180
gggcatccag	tcggccgac	ctatatagta	tttttcttcc	cctccgttgg	cgaagatgaa	240
gatgcgcgga	tgttccagat	aacggtcgat	gatgccgttg	atccggatgt	tgtcgtcgac	300
tcccgggatg	ccggtcacca	gggagcagtt	gcccggacc	accaggctcg	tttgtacacc	360
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catttttact	tttccctcac	tgtctttgcg	caacaggcgg	atggcaaggt	agatgtcttc	1560
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<210> 2085
 <211> 1029
 <212> DNA
 <213> B.fragilis

<400> 2085

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aaatacaatg	atgcacaggt	ggcctcgctg	atcacgctct	tcctgatgcg	taacatctcg	180
gtagaggaac	tttgcggtat	tcgtgacgca	ctgcttgaac	tgccgggtccc	ggtagatttg	240
agtgaagttg	ccccaataga	cattgtggga	accggagggg	acggcaagaa	taccttcaac	300
atctccaccg	cggcttgctt	cacagtagcc	ggtgccggat	ttccggtagt	caaacatggg	360
aattacgggtg	ccacttccgt	cagcggagcc	agcaacgtga	tggaaacagca	cggagtaaag	420
ttcaccgacc	atacagaccg	cctacgcgcg	tcgatggaga	agtgtaacat	cgtttatctg	480

catgcacctc	tgttcaaccc	ggctctgaaa	gcggtggcac	cgatacgcaa	agcattggcc	540
gtacgcacgt	tcttcaatat	gctgggccc	ttggtaaacc	ctgtcatccc	cacctatcaa	600
ctgctcggag	tatacaatct	cccgctgctc	cgctgtata	cctataccta	tcaggaaaagc	660
gctaccgct	ttgcggtagt	acatagcctg	gacggatatg	acgaaatctc	tctgaccgac	720
gaattttaaag	tggcgacatg	tggaaaacgag	aaaatctaca	ctccggagag	cctgggcttc	780
aaccgctgtc	gggaatccga	actcgacggt	ggaaataccc	cggaagatgc	cgcaagaata	840
tttgacgccg	taatggagg	aacagccacc	gaagcacaga	agaatgtggt	gacgtcaat	900
gcggcctttg	ccatccgggt	gatttgtccg	gagaaaccga	tagaagaatg	tatcgccctg	960
gcacgggaat	cactggaaaag	cggcaaggct	cgggagactt	taaagaaatt	tgtcgaacta	1020
aacggatag						1029

<210> 2086

<211> 453

<212> DNA

<213> B.fragilis

<400> 2086

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gctttacttt	ccgcttgtgg	aagcagaact	tcggattatg	atgccacggg	aactttcgaa	120
gctacggaag	ttctggtttc	ggccgaagct	tcggggaaac	tcttgtactt	tcattgtttaa	180
gaaggtagcc	ggctgaaagc	aggcgaagaa	gtagggtctga	tcgatacgct	acaactctat	240
ctgaagaaac	tgcaattgca	ggccagcatg	aagtcgggtt	aaagccaacg	tccggacgtc	300
aacaaacaga	ttgctgctac	ccggcagcag	atcgctaccg	cccggagaga	gaagagacgc	360
gtggaaaacc	tggtgaaagc	cggagccgcc	aatcagaagc	aactggatga	ttgggggtctt	420
caccacgggg	gtggaaggta	tcgcgttcat	ggc			453

<210> 2087

<211> 195

<212> DNA

<213> B.fragilis

<400> 2087

atgtatcggc	ttctcattca	tattcgggaa	agtcacgtg	aatttcggca	acagtttatt	60
gccggcgga	tcgtaagtga	aaagagtatc	tataccggta	tggaagaaat	cgaaatcgcc	120
acagttccta	taagagaaaa	cctctccgtc	gaagttcatc	accttcgttg	cggcagttgc	180
cggaatttgg	tttag					195

<210> 2088

<211> 912

<212> DNA

<213> B.fragilis

<400> 2088

atagatataa	gacatgcttt	ttataaaaaac	aaaagtcaaa	aagacatatc	tttgtgcagt	60
aacaatgcaa	aaggatacat	aaatcaacca	atattgataa	aaatggcaag	agcgattcaa	120
ttcaccaaga	tgcattggaac	agggaaatgat	tacatctatg	taaatactct	cagattttcca	180
atcgcccgtc	ctgaaaaggc	agccatcgaa	tggagtgcct	atcatacggg	aatcggaagt	240
gacggacttg	tgttgatcgg	acactcggat	aaagcggatt	tcagtatgog	catattcaat	300
gccgacgggt	cggaggccat	gatgtgtggc	aatgcaagcc	gatgcacgog	caaatatctc	360
tatgaatacg	gactgacctc	caaaaacgtt	atcacactgg	acaccctctc	gggcatcaaa	420
atattggaac	tacaccttga	aggacggacc	gtggaaactg	taacggtcga	catggggata	480
ccactggaaa	ccggtacgat	tgacttcgat	ggcgaatttc	cgttcctttc	tacccaagtg	540
tcaatgggca	accgcacatc	cgtcactttt	gtggacgaca	tccggatcgt	caatctttcg	600
gagatgggac	cgaagctgga	aaaacatcct	ctgttccccg	accgtacaaa	tgtagagttt	660
gccagataa	cgggagagaa	tacaatccgg	atgcgggttt	gggaaagagg	atcgggcatc	720
acacaagcct	gcgggacagg	tgcttgcgct	acgcacacct	cacgggacgg		780
acggggcgaa	ccgttaacgt	agtaatggac	ggaggcacac	tgaccataga	atgggacgaa	840
gcaacaggcc	atatatctat	gaccggaccg	gccgtaaaag	ttttcgatgg	aaccatagaa	900
ctgagagaat	ag					912

<210> 2089
 <211> 183
 <212> DNA
 <213> B.fragilis

<400> 2089
 ttgtatcgaa gcgatgacgac gcatcaagaa cggactgttaa tgacagacag tcatgtcacc 60
 acagattaca cggatttttca cagattaata atttattttca ttgaaaatca gattaaaaca 120
 tctgtgttaa tctgtgtaat ctgtgggtgaa tacttgcccc atctttcttc tattatttga 180
 taa 183

<210> 2090
 <211> 201
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222>
 (103), (104), (105), (106), (107), (109), (111), (112), (113), (114), (115), (119), (120), (121), (122), (123), (124), (126), (127), (128), (129), (132), (133), (134), (136), (138), (139), (140), (141), (142), (144), (148), (153), (171), (178), (179), (180), (181), (183), (189)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2090
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 tttttccgcc tccaggcggc ttataaaaaa aaaaaagggg ggnnnnnana nnnnnccnn 120
 nnnnnnnna annnncnnn nncnaatnct ttncacctt tattcaccaa natatccnn 180
 ncntttatnc caaaaaacta a 201

<210> 2091
 <211> 279
 <212> DNA
 <213> B.fragilis

<400> 2091
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 cgtgcggcag aagcgatcta cactcctgag ggaaaagaac agattcagga aacaatcaat 120
 tactacatga ccaatgcccg gatcatgaaa gagggcctgg aatctaccgg cctgaaagtg 180
 tacggagggg tgaacgcacc ctattttatgg gtaaaaaact ccaaaacgga acaagctcgt 240
 ggcgcttctt tgaccagatg ctatacgaag acaacgtag 279

<210> 2092
 <211> 633
 <212> DNA
 <213> B.fragilis

<400> 2092
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 gagacttcgg tgatcatacg cagtgggtctg acactggccc tgaaacgttt acccaattta 120
 aagattcaac cgggtggagtt gttgtcggta gaggcgctta atgattgtct gcgtacgcag 180
 tttcctgaca tactggttgt caatcccacc tttggtgact tttttgatgt ggcgcgtttc 240
 cgtgaagaga ctgccggcaa aggaatccgg gtagtagcgt tggtcagttc gtttatcgat 300
 gcttcggttc tcagtaata cgatgcgtct ttttctattt tcgatgattt ggaggcattg 360
 gccataaaaa tcaatctttt gcagaatctc gagcccgaag aagaggagga cagtcaagag 420
 aatttgagcc agcgtgaaaa ggagattgtg atttgtgtgg tgaaaggaat gaccaataag 480
 gagatagccg aaaagctgtt cctctccatt catactgtga ttacacatcg cagaaacatc 540
 agcaagaagt tgcaaatata cagtgcggcc ggtctgacca tctatgctat tgtaaataag 600

ctgggtgagc ttagtgatgt gaaggattta tag

633

<210> 2093

<211> 1137

<212> DNA

<213> B.fragilis

<400> 2093

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ctgggcactg	tctgcatctc	ctgtggtcat	ccgtctcaca	aaaccggaag	tgagaaggaa	120
gcgctgggca	aactcctttt	tcatgatact	tcaactgtccg	agccaccggg	gcaatcgtgt	180
gccacctgcc	atgcttcttc	caagggattt	gccgatgaac	aagcccggtgc	catatccgaa	240
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gtgcccgaat	tgcattatga	cgatgatgac	gaaaactatg	tgggagggtt	gttctgggac	360
ggtcgttctc	cctccttgca	ggatcaggca	ggcattccgc	tcttgaatcc	tgtggaaatg	420
ggaaataggg	acaaacagat	ggtggcggag	aaagtgaagc	ggactccgta	ttatgaccgg	480
atagtgcaga	tatatggaga	gacagaacat	gccgattcct	tgtttgcccc	tgttacggac	540
gcattggccg	cttatcaggc	atccaaggag	atcaatccct	ttacatccaa	gtatgatgcg	600
tataaaaaag	gaaattatca	gctgaccgaa	caggaagcga	gaggcaagga	actgttcaaa	660
gataaggggc	agtgtgccga	atgtcatatc	ctggaccgtg	acaaacgtgc	gcacgcacg	720
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tataaggtag	cggcagaata	ttttctgtta	gctgcggatt	cggttgatct	gggactggga	840
gccattgtga	atgccgaaag	cgaaaatggc	aagttccgtg	taccacggtt	gcgaaatgtc	900
gaactgacgg	ctccgtatgg	tcataatggc	tattttaaga	cactcgagga	gattgtacat	960
ttctataacg	tgcgggatgt	gagtgatgaa	tttcctcctg	ccgagtatcc	tgccaccgtg	1020
aacaaggagg	aactgggaaa	cctcggactg	acacaggaag	aagaagccga	tatcgtggca	1080
tttatgaaaa	cactgaccga	cggctatatg	aaagtgcata	aatcggagaa	gcgctag	1137

<210> 2094

<211> 432

<212> DNA

<213> B.fragilis

<400> 2094

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cacattatga	gaaagcta	attacttggt	gacgataaag	aaactatcgc	taaggtcgca	120
tcaatctatt	taggaaaaga	ttatgatatt	caatatcttc	ccgaccccat	ccacgcactt	180
gaatggctac	atgaaggaaa	aacacccgat	ctgatataat	cggatatacg	catgccgctg	240
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gtcatcatgc	tttccagtga	agaaaagtacc	agtgaagga	tcaggctgct	gcaagaagga	360
gctgtagatt	atatactgaa	acctttcaac	ccaatggaac	taaaaatacg	tgtcaaaaaa	420
atcatagaat	aa					432

<210> 2095

<211> 405

<212> DNA

<213> B.fragilis

<400> 2095

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aacatgggtac	tctatacgat	gaacaaggaa	cacgaagcct	ttgccatacg	ccgtctggaa	180
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actccggaag	aagattttcat	tctgggtgcc	atgctcggat	acgacatctg	ccaacagtgc	360
aaacgctatt	gcaacaaaaa	agggaatata	aagattgccc	gctga		405

<210> 2096

<211> 966

<213> B.fragilis

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tgtgataaaa	acagatttat	ggaaaagatc	aaacctctgg	aactggcgct	cgacctgctg	120
aaacacagca	atatcgtagc	caataacgaa	tatcgctttg	tcacccccga	tttcgggatt	180
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gagtacaaca	tatatcccca	aaccattgcc	acattcctcc	ccggtctctat	catcgaactt	360
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tctttcttct	gcaagttctt	taagcgaatg	acgggaatga	ctccacagga	atatcaaaaa	960
aggtga						966

<211> 237

<213> B.fragilis

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ccgtg	gttattatat	tgaaaaagag	gatgtgtacg	agcttgtgga	cggtatcac	120
aggtataagg	tcatgatgac	ctcgccaga	atatacaagc	gggagaacgg	actgttacc	180
gttaccgtta	tccgtaagga	tctggccgag	cgtatgagcc	tctaccatcc	gtcataa	237

<211> 369

<213> B.fragilis

tgcacatcg	caccgaacac	caagatatca	ggaggaaaaa	ggatatcaag	tcacgtacca	60
catcgctgaa	acgatgtcgg	gttgattttt	cgtagtgtcg	cttcttcact	cgccaacgca	120
agaatcaac	tgggaaactt	ctaccgcagg	atacgttcaa	gagccggagg	taaagccgca	180
gtcattgcc	ctgccacaa	ggtcaccgag	atattctttg	ccatggttgc	aaaccagaca	240
ccttataatc	cggaaaaagt	aggtatagat	gaaaaagtat	tactcgagaa	gcggattacg	300
agatacaaac	gtgaattaga	acgaattaca	gggatgcata	tagaaattgg	caatgcatgt	360
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<211> 273

<213> B.fragilis

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tttaagcagc	ttctcctcac	tgatattatg	caggccaacc	aaagacttgc	cgccgtcatc	120
ctggctgata	tccctaaacc	ggatgtcatc	ctgactctca	aggaagctgc	ccgtattctg	180
gctggcggat	tttatttggg	tggcggcaaa	cgagatataa	tccaccgtgc	ggtcattttc	240
ggaaccata	tgggcactgt	ccgccacatc	tga			273

<210> 2100
 <211> 3138
 <212> DNA
 <213> B.fragilis

<400> 2100

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gaacaaatat	ccgaatatct	tttcacaacc	gaggaacagg	ctgtcatagc	ccgcagtaag	120
gcggaaggca	gttacatgaa	agctccgaac	ggacaggcaa	ccaacctgaa	tgaaaagcag	180
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aacttgcgca	atccttttga	agtggatgcc	caaggggcaa	atttctcttc	catagaatac	480
ggcggcgaga	aagtggcggc	atccgatttg	ggcaatttgg	cggaaatgga	agggatatgac	540
gggggtggtga	tttcagatgt	ggcggacagt	gccgatatgg	gttccgaaaa	tgaccgcacg	600
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 <212> DNA
 <213> B.fragilis

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 ggactggatg ttgtattaac caacgcaagg gacataaaaa acataacaga gaggaaaacc 240
 gacgagtcgg atgccgaatg gctgctgttg ctgcaccagt acgggttgct caagacaagt 300
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 <211> 423
 <212> DNA
 <213> B.fragilis

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 taa 423

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 <211> 468
 <212> DNA
 <213> B.fragilis

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 tgcaaaccta gaatgtattc ccgatacaat acttcttata ggcaaggtag cccttatctg 420
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 <211> 255
 <212> DNA
 <213> B.fragilis

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 gttgtggatc ctagattgaa tcatattcta tacaataatg taatatatat tgttataaga 180
 aaaaattttg tgagcgcccc caatgattgg catcgcaaca gcttcaattg tcagccgctt 240
 gatatcaccg aataa 255

<210> 2105
 <211> 1611

<212> DNA

<213> B.fragilis

<400> 2105

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<210> 2106

<211> 690

<212> DNA

<213> B.fragilis

<400> 2106

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gtggaacgat	tcaatctttt	gtataaaagt	tcgtttaata	aggtttgcaa	ctttgcgatgc	180
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attgcccaaa	ctctgggcat	ctcgggtcaaa	ggggtagatt	atcacatgaa	caaggccctt	600
aaagaacttc	gtgctgccct	caaagactac	ctccctatct	taacttggct	ctgttttatg	660
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<210> 2107

<211> 474

<212> DNA

<213> B.fragilis

<400> 2107

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cgggagaata	acaactaccc	ttataaatcc	tcccggatgt	ttacctggca	tgttctctac	180
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cgggatgtcg	gaattttcaa	atacatgaat	ttcatcacga	tccgggaaac	caagttatat	420
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<210> 2108
 <211> 309
 <212> DNA
 <213> B.fragilis

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gagaagatta	agggcgtaca	atatgtggta	attggtaaaa	ccaatcgttt	gtccgaaggt	180
gatcacggat	atattgaatt	tggtcttaac	cagggacgta	aatgggatga	taaaaaatac	240
ttgcgtccga	taccgttgac	ggctactcag	ataaatccgg	ctttattgcc	tcaaaaccca	300
ggttggttaa						309

<210> 2109
 <211> 1272
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (36), (149), (1025), (1084)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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gggcttttta	ccgaacaaag	cggagaaaga	acgccgacgc	cagacgatgg	ccgagtacga	1260
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 <211> 891
 <212> DNA
 <213> B.fragilis

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 ttaatcagag gcagcgagat tactcgcccg atggctcccg gacactttta tgccattttt 180
 cttgctgact ccaatccatt ggaacaaaaa gagtataaag acgcttttcaa tgaagccaaa 240
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 actaagtggg ggcgcgagca tacagaactc tataatgaag gttgtatgca tggcattgaa 360
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 acaatgattg gtacttctga tattcatcaa cccattcaga ctgattatga tttctctaaa 480
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 aaaggagtga cactctctat aaccaatact acggatttag tctgaaact gaagaagacg 720
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<210> 2111
 <211> 357
 <212> DNA
 <213> B.fragilis

<400> 2111
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 ctgtatgtgg ggggcataacc ctatgacacg aagccgatgc tggatattct ccgcggatcc 180
 ggagtagatc ccgggaaact ctctcccgcc aggtggatct ctttgcctcg ggggcagcct 240
 acacgcctgc cgggttgtga aaagccgttc atgctgttca aagcccatc cgcatatact 300
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<210> 2112
 <211> 381
 <212> DNA
 <213> B.fragilis

<400> 2112
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<210> 2113
 <211> 210
 <212> DNA
 <213> B.fragilis

<400> 2113
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<210> 2114
 <211> 210
 <212> DNA
 <213> B.fragilis

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 actttgaagt gcgatttcca tatgcacact gttttctctg atgggtctggg ttggcctaca 180
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<210> 2115
 <211> 1320
 <212> DNA
 <213> B.fragilis

<400> 2115
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<210> 2116
 <211> 642
 <212> DNA
 <213> B.fragilis

<400> 2116
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<210> 2117
 <211> 309
 <212> DNA
 <213> B.fragilis

<400> 2117
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atgtggggaa tatccacaga agagctgaac agtaagttcg gtgaccgact ttggaaatat 180
tgttcggaac aagccaaacc ttatctggaa aatgggaaat taaagttgca taacgatcgg 240
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<210> 2118
<211> 1563
<212> DNA
<213> B.fragilis

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tccgtaattc ctttcatttt ttctctttat tcacattatt atttattact ttgcgggca 180
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taa 1563

<210> 2119
<211> 1083
<212> DNA
<213> B.fragilis

<400> 2119
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<210> 2120

<211> 1299

<212> DNA

<213> B.fragilis

<400> 2120

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cacttcgtag	atacccagag	cttccatgcg	gtcgatgtcc	ccggcaatga	ttgctttgat	180
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catttcgtgg	atgtcgtcac	cttcgggaat	cactgtgagc	tggctgtcga	aagcgcccag	420
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gctaaccggc	gaaacaaatt	tcacttcagg	atgattcttg	tcgataaaca	agggtccccc	1200
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<210> 2121

<211> 1068

<212> DNA

<213> B.fragilis

<400> 2121

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cgcttggtag	tggagaagaa	attcgcaact	cccaagggtg	tggaaatcct	gaagcagaaa	1020
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<210> 2122
 <211> 2439
 <212> DNA
 <213> B.fragilis

<400> 2122

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cggcagaaga	gagcctcctg	gctgaaaagt	gtatttgctc	tgacttgctt	gctactgagc	300
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<210> 2123
 <211> 447
 <212> DNA
 <213> B.fragilis

<400> 2123

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ctgtatttcc	atcggcgagg	aaccaacgca	agcggatggg	atcggttgga	atataatttc	180
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<210> 2124

<211> 306

<212> DNA

<213> B.fragilis

<400> 2124

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ggcctgtatg	aaatgcgtat	caccttaggt	agtgatatat	ttcgtgtctt	ctgttttttc	180
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<210> 2125

<211> 951

<212> DNA

<213> B.fragilis

<400> 2125

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<210> 2126

<211> 270

<212> DNA

<213> B.fragilis

<400> 2126

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aggtataaag	atgaagatac	cggttcaggc	ggcgtaaact	cacttccgaa	acctgagcta	180
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<210> 2127

<211> 183

<212> DNA

<213> B.fragilis

<400> 2127

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<210> 2128

<211> 366

<212> DNA

<213> B.fragilis

<400> 2128

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<210> 2129

<211> 1494

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1467), (1468), (1469), (1470), (1473), (1474), (1476), (1483)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2129

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ggccgttaca	ctctgaaaat	agaaccatca	gataaaaatcc	ttgtcatatc	ctatatagga	240
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gtagaacaga	agttgcaagg	tatgacaacg	ggggtaaaaca	taacttcagg	ttccggtcag	480
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 <212> DNA
 <213> B.fragilis

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<210> 2131
 <211> 270
 <212> DNA
 <213> B.fragilis

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 atatatcgga cttggaatcc gacaaatgta gaagaagctt ctagtatgat atatttacct 180
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<210> 2132
 <211> 207
 <212> DNA
 <213> B.fragilis

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 ggtgttgaga tcgtttacatc cggatag 207

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 <212> DNA
 <213> B.fragilis

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 gttcaaattc gcaatgcccg tcagaagaaa gaaatgacgc aggcacaact ggccgagcgc 180
 attaataaaa agcgtacgtt tatctctaaa gtagagaatg atggaggtaa cttgaccctg 240
 aaaaccctga tagatatagt tgaaaggggg cttggcggta aactgaatat cgaagtaaaa 300
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<210> 2134
 <211> 1122
 <212> DNA
 <213> B.fragilis

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 gccgtgttcc atttcacgtg gaacgagatc caccgcgtgg aaggctatta catgatcatg 180
 gactccgacg gcctgttcga cgtctcggac tattcccgcga tggacgagca acgcatcgcg 240
 ggtattgtcg actattgcgc cgagctgggg cttttcgaca aaggactttg gcggagccgc 300
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 tacctgggtg tggattccaa tgtcatccaa tgggtacggc tcctgaaaag ccgttatccg 780
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 <211> 378
 <212> DNA
 <213> B.fragilis

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 gtgaaacatc tgcagtcctt gagttccgat gaactatttc ggaagtacca ggagtcacgc 180
 cgggtgaagc tgcagaacta tgagcaggcc gtcgtatcct tactcttcac ttttcccttc 240
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 cggtcctgtc gtttatga 378

<210> 2136
 <211> 630
 <212> DNA
 <213> B.fragilis

<400> 2136
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 gcttatgtag ccggtgtggc ttagccatt ggcggtggta ccatacgtga tgttttattg 180
 gatgtcactc cattctggat gacgaatcct atttatttaa tttgctcggc gctggccttg 240
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 atttgctgc ctatcttgaa gggggaataa 630

<210> 2137
 <211> 312
 <212> DNA
 <213> B.fragilis

<400> 2137
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<210> 2138
 <211> 1341
 <212> DNA
 <213> B.fragilis

<400> 2138
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<210> 2139
 <211> 498
 <212> DNA
 <213> B.fragilis

<400> 2139
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 cagcggcatg ggcgcgaggt ccgtccctct tatgagatca gcacttcgca attttctgat 180
 atgaaaagtc ggagactgac gcgtaattac ggattcgggt gatacagcat ctaccgttat 240
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 cgtgcgggtt cctcttactg gaatgcctct ttggaagaca ttaccgggat cgtggacggg 360
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 gctctttcgg ccagttga 498

<210> 2140
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 2140
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 gaagctgccg aaatggtaaa gcaggaaaaca aaagagaaat gtcaaatagc ctttcgaaat 180
 tttatgctta gagcaacact tgcaaagtgt tccgggtgaat cacttgactt tgaaaaagag 240
 tttgcagata ctatgagtca aatttag 267

<210> 2141
 <211> 963
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 2143

<211> 333

<212> DNA

<213> B.fragilis

<400> 2143

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gaacggtttg	attataatga	tcaggctatt	tattcttttg	ctaccaaaga	gattgatgca	300
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<210> 2144

<211> 540

<212> DNA

<213> B.fragilis

<400> 2144

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aaccgggaag	aaaggaaaag	gctgaaggaa	cagactgtaa	aagagaagat	tgaatcgga	180
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cccgaagatc	agttcagatt	caggataaca	atctattcca	acggttcac	cagcatagat	480
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<210> 2145

<211> 198

<212> DNA

<213> B.fragilis

<400> 2145

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198

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attcgtggtg aaatatcgt tatgaatgat aatgatgaat taggaggact gatagataat      180
gatgtcccgt ttacggtcat tggtcatgta tgcaccgaag aatgtaatac aacatgctta      240
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catgtttttg tgtga                                     315
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<400> 2147						
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aagactaccg	gcaatgaatg	gaaaagccgg	gaattcgctt	tggagacaga	agagagcaaaa	180
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<400> 2148						
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caaattgcct	ggacggatga	caaaggtgaa	gaacacctgg	tcaaacaggt	atcccatgac	300
agtgtcacag	gcgaaaatat	gacccttatc	gaactctcgg	aagttactgt	catggcгаааg	360
agcaaacagg	tagccgagag	aaacggгаааg	atcaacctgg	actttctcgt	aacgggtcccc	420
ggtgagctga	tcaacaacaa	gtggcaggtc	cagctcactc	ccgtagccta	taaaccgtcc	480
gacacctctg	acctggacaa	gatcttcttt	tacggggccg	actttgccaa	aatgcaggag	540
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cagcgcgctg	tcagacagca	aggctataag	aaggcacctg	ccgagctgga	ggaggaatac	660
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accaatgccc	ggttcgcact	gttcaactac	aagatggaac	gtaaccggca	ggccattgcc	780
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aaatacattc	cttccaattg	gaagatgttt	gccgaaggta	attataaaat	ccgcacgaga	900
agcatcacc	cggaaгattc	ggcgggcata	acggaacgct	ttaccgatta	caagaagata	960
gccgagaacc	agaaaгaaa	ggagcaggcc	ggtgcgatgt	acgaaaagta	tgtgcggttt	1020
ccttatgagc	ccgcacgcct	ggatacggtc	atcaagcaag	gcaacagctt	cgtgtattat	1080
tacaagcagg	agcttcccgc	caccgaaaac	acgaagaaga	tagagctgac	gcttgacgga	1140
cagatcctct	ccagggacga	ggtacggacc	cagcttccgc	catcggacac	gatcacctat	1200
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ttcgatgaaa	agaccggaaa	caacaaggcg	gagatgcaca	aggtgttcga	gacctccgt	1380
ggaatcaatt	atacgggaga	gttctcata	gacagcatcc	cgatgacggc	cacttcatcc	1440
cccgagggca	gttccgaaat	gaaccttttc	ctttccaggg	aacgtgcgct	ggcactgaag	1500

aaataccttg	ccgcacgcac	ggaagaccgg	gaaggggtcg	atacgctttt	ccgcccgcgc	1560
tggaccggtg	aggaatggag	caggctgcac	gaactggtcc	tttcagatga	cagcctggca	1620
aacaaggccg	gcatttttacg	tatcctgaaa	gagacgaaga	atcccgacag	ccgggaacat	1680
gccctgcgcg	aatatgcttc	cgactacaaa	cgcatccggg	aaagggctct	c	1731

<210> 2149

<211> 357

<212> DNA

<213> B.fragilis

<400> 2149

gcaaaaggag	gaacagccgg	catgaaaaag	agatcatttc	ttttgggaag	cctgcttgcc	60
ttcactctgg	gagtatcggc	ccagtcctat	tccttcgcta	ccaacgtcct	gggtctggct	120
acgaccaacc	tgaacctgga	ggcatccatg	accctgggcc	gtaaatggtc	gcttcacctg	180
cccgtgcagt	ataacccgtt	ccgcttcagc	aggaaccggc	agttccgtaa	cctatatgtc	240
gctccgggtg	tacgctactg	gctgctcgag	agctatatgg	ggccatttat	cggcatgcac	300
ggcaccgccc	ggtacatata	gtgtgggcaa	cctcttcggc	agcaggtacc	gctatga	357

<210> 2150

<211> 330

<212> DNA

<213> B.fragilis

<400> 2150

aggcacatgg	gatatgtatc	gatcaaaccg	ggatattgcc	gttctcagaa	gtacaggaat	60
aagtatatac	gttggtactt	tgaaggagtg	acaccgggac	taagagggtca	gtttgaagcg	120
atgcgaagca	cttcggcgga	agaagtgcgt	gtagccgctc	tgggtgcattg	ccataacgct	180
gttatagata	gatacctggt	aacaatcggg	atgtgcagtg	ccaaagtaca	gcccagaaat	240
acaaagacgg	actattcggc	ttaccactcc	ggaatggatg	acggacggag	tatcagcctg	300
caccggcaaa	taaacggagg	aatgtatga				330

<210> 2151

<211> 288

<212> DNA

<213> B.fragilis

<400> 2151

agaatgaagg	gcacatactg	gtatgccgtg	gactatgccg	gcacggggca	cctttttacc	60
tacaagcccg	aaagggatgc	ggggatctgg	aacggggagg	aggccctgca	ggtttcccaa	120
ggggcactcc	gggaggtatt	ccccaaagatc	acctggcagg	actcaccctg	agtggtaaca	180
ctggaggtac	taccctgtga	ggagaccttc	cgctgcgcc	tgtcaaagaa	ctgcggttat	240
atcctgagaa	aatatctccg	tttcccccg	gaaggaaaaa	acaaatga		288

<210> 2152

<211> 186

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (8)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2152

aggaaaangg	ggaatgggga	aataaagggg	aggggggtga	agatgggaat	gagatggttt	60
caaggagggt	ttgggagcaa	attaagttgg	tgggagaagg	ggggggggaa	tgagggagaa	120
gcggaaaaac	ggaagattaa	aatggcctgg	atgtgtgaac	cggtaacctg	acagaataat	180
atatag						186

<210> 2153
 <211> 222
 <212> DNA
 <213> B.fragilis

<400> 2153
 gttcaccgga tttatatcag ccctactatt ggtgttcctg atatgaaaaa gaaatcagag 60
 aagcaaaata tgaatgtgaa aaatatgaat aaaataaaca cagaaaaatc tccggccatt 120
 acgcttaaca accggagact acacaaacaa aacaaacaat acatagcttt atcttcccag 180
 accaagctga caaaaacatt aaatattagg atacaaatat ag 222

<210> 2154
 <211> 417
 <212> DNA
 <213> B.fragilis

<400> 2154
 accgtagacg tatcacgcgg agaatggaga tacaggataa aagacaggaa cccattaaat 60
 aacagccata tgtatttcat acattacata cagacatacg catcggtgaa ccggaaggga 120
 agcgagctcc aggaatatgt cctgcagctc aaggacagcc tgataaagga cagggagggtc 180
 ctggatgacc tgaaagagga actccactgc cggatcgggg agcttgacgc caagtatccg 240
 cgtacacaac ccctgcattc ggatgcggca agcggcaggg atagcatcca atggatcatc 300
 cacgtgaaag gcaagccgga taacctgata tgtattattt cgattacgaa agtcagaaac 360
 ctgctggggag aaggaaccgg tttctttctc ggggaaaaga caggaggtaa agaatga 417

<210> 2155
 <211> 1296
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (81), (138)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2155
 ttaaaataca aatgtaaaag aataagtttg aattcatatc ttttagtcag aaaacttttt 60
 gaagcgatat ttcggttacc ntatagcggt ctctgttttg cttcacatac tcttcgagga 120
 attcctataa tagcccgncg gtaccacgcc tgcaggttga ccaatggcat tacgctcgaa 180
 cttgccgtcc ttcatcttac ggatgacacc atcattgtac ttactatga taaattcgcc 240
 caaacgtttc caagtatcga aagtgttttg cgctgtcatg tcggtatagt tggtcagaaa 300
 cttcacagcc gtttcggtat tttctcgtc caacttaaca gcaactgctt caataccttc 360
 ctgtgcctcg ttgaagggtg tttcaagttc gttctgcgta gcacgtacat cgccgatcat 420
 caaatcgtag cggggatata ccattgttggc caccagttg aaaatccaaa aagcggaggtt 480
 ccaggagaag gtgatgtaat cggcaccgtc tacacgcgta tagcataccg gagctttggt 540
 agtacaacaa tatacgggag tgaaaacagt catgttggca tcatccgtac caaaccaaag 600
 cacaccgcct acagcatcgg gaagattggc acgcatctga gccacaaaaa cgaaaccgct 660
 ctgttgtgta gagatgggac gctcattgaa atactcctg tcgctacct tgaaagtcag 720
 cggagagagg cggtaagggtg ttttataagg tccggcacca aaatcattgc tgatgtcgag 780
 ggcggttctt tcataatggt cgcgcatggc attctttaca tcctgaacgg agagtttgcg 840
 tttcggtctt acgaacagag gcatagggtc attggtcttt ccttggtatg aaggcagata 900
 ggcttcacct tggtcggtaa acatattgaa gtactccac acacgggctt cacagaaacg 960
 gcgggacacc aaatcgagcg gtgcataagc atcggcaaaag ctgaagtctt tgttcacacc 1020
 gctgaaatat cttttttcgc gggcaaaaga aataacgtca ttagaataca tgcagttggc 1080
 cttgtcagcc atatcgaact gatggatcgc cgaactggtt gcattgtgccc aaatgcagtc 1140
 gtccggcact cggacagcta cccatacggc tccccggatg ccgggacctt tacctatcat 1200
 ctccataatc catatttcat tgggatcggc aatggtgaag actcgccatg ctgtaatatc 1260
 cgtattcctg caccagttca gtgtcttcac cgcgggg 1296

<210> 2156
 <211> 2292
 <212> DNA
 <213> B.fragilis

<400> 2156

aatctacaca	aaggtatgaa	aaataacact	ttgtcggggg	catattaccc	taaaaatccc	60
caaataaaaac	atTTTTTTtag	aattatgaga	attacattgt	tcctattgat	ggcatgtggt	120
TTTTCTTTat	atgccggaaa	ttcctattct	caaaatacaa	gagttagttt	tgccatggat	180
aatgtaggac	tcaataaggt	cctagaggag	atagagagtc	agacggatta	tctTTTTatt	240
tataatagtc	agataaatgt	aaataagcta	gttactatta	aggcaaataa	gcagacgggt	300
tcaaaggtat	tggatcaaat	attacagaac	actgggtattg	aatataaatt	ggaaggctcg	360
catattatat	tagaaaaaaa	agtagaagaa	gttcacaata	gctcgtccgc	cgttcagcaa	420
cagcaaacta	aaaagataac	cggaaaagtt	gtcgataaga	caggagaggc	tattattgga	480
gcgaatgtca	aaatacaagg	tacagataaa	ggaactatta	ctgatctcga	tggtaatTTT	540
atcttgaggg	ttgctccaaa	ggatgtgctt	gttatcagtt	acataggcta	tttggtacg	600
aaagttccca	tagctgggca	aaaacagatc	catgtggtgt	tgtctgagga	taataaaatg	660
ttggacgaag	tcgttgtaat	tggttatggt	actacttcta	cacgcaagat	ggcgtctgct	720
gttacagccg	tgaaggtga	gaaactacag	gacttgccat	ttaatagtgt	agcagcttca	780
ctggccggac	gtgcaacagg	tgttattgta	caatcatcag	gtggtgaacc	gggatctgcc	840
ccttctatct	cgatccgtgg	cggtggcgca	cctgtctatg	tcatagatgg	tgttatttcc	900
gatgcttggg	atttcaatac	gttgaatccg	aatgatatac	aaagcctttc	aattctaaag	960
gatgcagcat	ctctggctgt	ttacggttca	cgggctgcca	atggtattgt	gatggtgaaa	1020
accaaacagg	gaggtaaagg	aaagacacgc	gtgaattata	cgtttaatgc	tgaattcagc	1080
caacctacca	aattactgaa	aaagactcgt	ggttatgact	atgcttacia	ccaaatgctt	1140
gccggtatca	atgatggttt	ggacgaggca	gatttacctt	ttaatcagga	agtattggat	1200
atcattaaaa	atcagtcaga	tccttatata	tcgggacacg	ccgatacaga	ttggctggga	1260
gaaggattga	aaactgttgc	tcctcaatac	aagcatacgg	tatcattgag	tggaagcggc	1320
aataaggtga	attactatat	ttctctgggt	atgctcaatc	aaggtagtat	ctatacttcg	1380
aatgcactga	actatgaccg	ctatacagtt	cgcagtaatg	ttaacacgac	ttttgataag	1440
attggtctga	aggtcagcct	gaatctgaac	ggagcttatg	aaaaaaagga	ataccctctc	1500
ttctcagcgg	caaagatctg	ggaagatcct	tataaccagt	ctccactgaa	tccggcttac	1560
aataaggatg	gtacttatgc	cgcagttacc	gaccatccgt	tggcggaaat	ggacaagcgt	1620
tcgggatata	acaggaacta	tggcaaattc	ataaaatccc	aagtagctgc	ggactggaca	1680
ttgccttggg	taaaggagtt	aaccttgggt	gctatgttca	actatcgtct	gaacgactca	1740
catgtgaaga	aattcagtac	taaggctcct	cagtattacg	cagatggagc	tgtatatcca	1800
ataggtaaac	cgacattgaa	tgaagaaggc	tattggggag	agtcctacia	tttcgaagta	1860
agtgccgctt	atgtgaaaac	ttttgccgaa	aagcatacga	ttgatgctaa	attcgtttat	1920
aatgttgcag	aaaatactgg	atggaatttt	aatgcataat	gtggggaata	cttatctacg	1980
gttgtggacc	agctatttgc	cgggtgcagca	tatacgcagc	agaatggcgg	ctattcggat	2040
gaaagaggac	gtatgggatt	ggtaggcctg	ttgaaatatg	actttatgaa	tcggaatatc	2100
gtggaaggta	gtttccgtta	ctatggatcg	gataacttca	ctccaagaca	tcgttgggga	2160
ttcttcccc	ccggagcgga	ggcgtgggcc	atcagtgaa	aacctttctt	taaagagtgg	2220
gaacaacatg	tattcaattt	gctcaaaact	cgccttttct	tatggacaga	cccgtaacgga	2280
aaatgggagt	aa					2292

<210> 2157
 <211> 213
 <212> DNA
 <213> B.fragilis

<400> 2157

tttgggggaa	aaactgcact	tcaggattta	attaaaaggg	gctttagggt	gcctccggaa	60
actgctttat	cctgggatta	cgggggaaat	tcctttatac	tctgggattg	gaatattggc	120
tttttttcaa	ctaactcgctt	tgtaaaaggt	caccttagaa	atatttctta	ttaccgcaaa	180
cccaaagggtg	gggttaatat	aattccgcgg	tga			213

<210> 2158
 <211> 1194

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1159)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2158

cccgcggtga	agacactgaa	ctgggtgcagg	aatacggata	ttacagcatg	gcgagtcttc	60
accattgccg	atcccaatga	aatatggatt	atggagatga	taggtaaagg	tcccggcatc	120
cggggagccg	tatgggtagc	tgtccgagtg	cgggacgact	gcatttcggc	acatgccaac	180
cagtcgcgca	tccatcagtt	cgatatggct	gacaaggcca	actgcatgta	ttctaatac	240
gttattttctt	ttgcccgcga	aaaaggatat	ttcagcggtg	tgaacaaaga	cttcagcttt	300
gccgatgctt	atgcaccgct	cgatttcggg	gcccgcggtt	tctgtgaagc	ccgtgtgtgg	360
agctacttca	atatgtttac	cgaccaaggt	gaagcctatc	tgccttatat	ccaaggaaag	420
accaatgacc	ctatgctctt	gttcgtaaa	ccgaaacgca	aactctccgt	tcaggatgta	480
aagaatgcca	tgcgcgacca	ttatgaagga	accgcctcgt	acatcagcaa	tgattttggg	540
gccggacctt	ataaaacacc	ttaccgcctc	tctccgctga	ctttcaagg	aggcgaccag	600
gagtatttca	atgagcgctc	catctctaca	caacagagcg	gtttcgcttt	tgtggctcag	660
atgcgtgcca	atcttcccga	tgcgttaggc	ggtgtgcttt	ggtttggtac	ggatgatgcc	720
aacatgactg	ttttcactcc	cgtatattgt	tgtactacca	aagctccggt	atgctatac	780
cgtgtagacg	gtgcgatta	catcaccttc	tccctggaact	ccgctttttg	gattttcaac	840
tgggtggcca	acatggtata	tcccgcctac	gatttgatga	tccgcatgt	acgtgctacg	900
cagaacgaac	ttgaaaccac	cttcaacgag	gcacaggaag	gtattgaagc	agttgctgtt	960
aagttgtacg	agaagaatcc	ggaaacggct	gtgaagtttc	tgaccaacta	taccgacatg	1020
acagcgcaaa	gcactttcga	tacttggaag	cgtttgggcg	aatttatcat	agtgaagtac	1080
aatgatgggtg	tcatccgtaa	gatgaaggac	ggcaagttcg	agcgtaatgc	cattggtcaa	1140
cctgcaggcg	tggtacgtnc	gggctattat	aggaattcct	cgaagagtat	gtga	1194

<210> 2159

<211> 1761

<212> DNA

<213> B.fragilis

<400> 2159

aatatagata	gaaccatggg	gaatgaagaa	ctaatacaac	aggtgactga	gaaagccgaa	60
aagtggctga	ccccggcgta	tgatgccgaa	actcaggctg	aagtgaacg	catgctggag	120
aacgaagata	agacagaatt	gatcgaggcc	ttttacaaag	atctcgaatt	tggtacgggc	180
ggactccgtg	ggatcatggg	cgtaggtacc	aatcgtatga	acatctatac	tgtcggagct	240
gctaccacag	gactctctaa	ctatctgaac	gcaaacttta	aagatatgaa	acagatttcg	300
gttgtagtcg	gatacgattg	ccgtaacaac	agttctctgt	ttgccaagat	ctctgcggat	360
attttctcgg	ccaatggcat	taaggatat	ttgttcgaag	agatgcgtcc	cactccggag	420
atgtcttttg	ccatccgtca	tctcggttgc	cagagcggca	ttatcctgac	tgcttcacac	480
aacccgaaag	aatacaacgg	ttataaggct	tattgggacg	acggtgcgca	agtactggct	540
ccgcacgata	agggcattat	cgatgaagtg	aataagattg	cttctgctgc	cgatatcaag	600
ttccaaggta	accggatctt	gattcagatc	atcggagaag	atgtcgataa	gatatatctg	660
gatatgggtg	agactgtttc	tatcgatcct	gaagcgatcg	cccgcataa	agatatgaag	720
attgtataca	ctccgatcca	cggtacaggc	atgatgctga	ttccgcgtgc	actgaagatg	780
tggggattcg	agaacgtata	taccgtgccc	gagcagatga	ttaaggacgg	taacttcccg	840
acagttgtct	ctccgaatcc	ggagaatgcg	gaagctttga	cgatggctct	taatctggct	900
aaagaaattg	atgcccacct	tgtaatggct	tccgaccggg	atgccgaccg	cgtaggtatc	960
gcttgtaaga	acgataaagg	cgaatgggta	ttgattaatg	gtaaccagac	ttgtctgatg	1020
tatctttatt	acatcatcac	tcaatataac	aaactgggca	aaatgaccgg	taatgaattt	1080
tgtgtgaaaa	ctatcgttac	taccgaactg	atcaagaaga	ttgccgataa	gaatcacatt	1140
gagatgctcg	attgctacac	cggtttcaaa	tggattgcc	gtgaaattcg	tttgctgtaa	1200
ggcaagaaga	aatacatcgg	cggtgggtgaa	gaaagctatg	gcttcctggc	tgaggacttt	1260
gttcgtgata	aagacgctgt	ttctgcttgc	tgcttgattg	ccgaagtggc	tgcttgggcc	1320
aaggataacg	gaaagactct	gtatcagttg	ctgatggaca	tctacgttga	atatggattc	1380

tctaaggaat	ttactgtaaa	cgttgtgaaa	cggggtgaaa	gcgggtgcgga	agagattaaa	1440
gccatgatgg	agaatttccg	tgctaaccct	cggaaagagt	tgggtgggtc	gaaagtgggt	1500
ctgtcgaaag	attacaagac	tctgaaacaa	accgacgcag	cgggccatgt	gactgacatc	1560
gatatgccgg	aaccatcgaa	tgtactgcaa	tatttcacag	aagacggtgg	aaaagtatct	1620
gttcgtccgt	caggaacgga	gccgaagatc	aaattctata	tcgaagtga	aggtgagatg	1680
ggatgccgca	actgttttgc	tactgccgat	gcagaagcta	ctgaaaaagt	agaagcagtg	1740
aagaagtcac	tggtatttta	a				1761

<210> 2160

<211> 195

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (54), (111)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2160

aggacggcaa	gttcgagcgt	aatgccattg	gtcaacctgc	aggcgtggta	cgtnccgggt	60
attataggaa	ttcctcgaag	agtatgtgaa	gcaaacagga	gaacgctata	nggtaaccga	120
aatatcgctt	caaaaagttt	tctgactaaa	agatatgaat	tcaaacttat	tcttttacat	180
ttgtatttta	attaa					195

<210> 2161

<211> 246

<212> DNA

<213> B.fragilis

<400> 2161

gaactatttta	tccaggaaaa	cgacagtgat	cgtttccctg	tactctctcc	tatcattgta	60
gaaacgggaa	aaatcagcac	gcggatagga	gacattgtcc	gagtgggaagg	caactgcacaa	120
gtcctcggct	ttttagagaa	tagtcccaaa	agaaatgccc	catccaatga	aggacaaggc	180
attccaataa	tattatggat	acattttatac	gatgctaagt	atccgtcaaa	agagtattta	240
aaatag						246

<210> 2162

<211> 945

<212> DNA

<213> B.fragilis

<400> 2162

tacattgtca	tggaacaaaga	tttactatat	aattttttata	aaggaaaggt	ttccatagaa	60
gaaggacaaa	gggtcaaggc	ttgggtagaa	gcatcagacg	aaaacgagcg	cgctttctat	120
agggaaacgta	aaatttttga	tgctttgatg	cttaataatc	cgcttccggg	aaagaaaacc	180
tctttttttca	atttttacaca	ttataaaaaa	atagagtggc	tgaaaattgc	catggctgta	240
atattgacat	ttctgcttag	ttattttctat	caggagtata	aagccggtct	ggattcagtg	300
gcaatgagta	cgatttctgt	tcttgaagga	caaagaacca	atgtcacatt	accgatggg	360
agtaatgttt	ggttaaattgc	atgtacaacg	atacaatatc	cgacttcttt	taacagccgg	420
gagcgttttcg	ttataactaaa	aggagaagct	tatttttgatg	tgaaaaagaa	taaaagcaga	480
cogtttatatg	tgacacacaga	tgcttatagc	atcgaagtat	taggtacgaa	gtttaatgtg	540
gatgcataatc	cggaaacaga	aaaatttgaa	actacattga	tgcatggcag	tgtaagggtc	600
actttgaaag	cagattcatc	gcaaacagta	atattaaagc	ctgatcataa	attgtcatta	660
gaaaaaggac	ggtttgtaat	gactaaagtg	gaagattata	atccttatcg	atggaaagaa	720
gggcttatct	gtttctctga	cgaatctttt	octaatatta	tgaaagactt	tgaaaagtat	780
tacggagtga	aaatagtgtg	agagaataaa	aatgtattgc	agattaatct	tacgggggaa	840
ttcagacaaa	cgcacggaat	agattatgcg	cttcgtatct	tacaaaaaaa	tatagatttc	900
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<210> 2163
 <211> 588
 <212> DNA
 <213> B.fragilis

<400> 2163
 tcctatgtaa tgcataattaa gactaatccg aaagataaaa tgtcttttaa tcagctatat 60
 aatgattatc agacacgttt tttgaatttt gctaatacct atgtcagaga ttgggatgta 120
 gcggaagata taacaacaga ggcgttaatt tattattggg aaaacagaaa tactttatct 180
 gaagtatcca atattcctgc atatatactt accatcataa aaaacaaaag tcttaattat 240
 cttcgtcatt tgcagatacg ggaagaacat tctgaaaata ttagaaaata tattgagtgg 300
 gaactcaatg cacgtatcgt ttcttttagat gcttgcaaac cttatgaact tttagtcaaa 360
 gagatgcaag agctgattca gcaaactttg gataaattgc cggagcgtac acgcaaaata 420
 tttatttttaa gccgttatga aaacaaatcg tataaggaga ttgctgctct aatgaatatg 480
 acaaccaaag gtgtagactt tcatatttgt aaagctttta aggcatcata gattaaccta 540
 aaagattatt ttccattatt tctttatttt ttgatgaaat ttcactag 588

<210> 2164
 <211> 1890
 <212> DNA
 <213> B.fragilis

<400> 2164
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 gaatatacag acgacaacat ccgacacctg agcgacatgg aacatgtgcg caccgcgtcg 120
 ggtatgtaca tcggtaagct gggcgacggg tcgcataccg aagacggaat atatgtcctt 180
 ctgaaagaag ttattgacaa cagtatcgac gaggttcaaaa tgcaatccgg caagaagatc 240
 gaaatcagag tggaagagaa tcttcgtgtc agtgtaacgg actacggcgg cggtatccca 300
 cagggaaaac taatagaggc agtcagtgtg ctgaacaccg gtggttaagta tgacagcaag 360
 gctttcaaga aaagtgtcgg actgaacggg gtccggcgtga aagctgtcaa tgctttgagc 420
 tcaaactttg aagtacgtag ttaccgggat ggtaaagtgc gttgcccac ctttaccaaa 480
 ggagagttgg tgacagacca cacagaagat acggaagaag aaaacggtag ttacatcttc 540
 ttcgaaaccgg atgaaacttt attcctgaat tatagtttcc gtcccgaatt tatcgagacg 600
 atgctgcgca attacacata cctgaacacc gggctggcaa ttatctataa tggccaacgg 660
 atcctttcgc gcaatggcct ggtagatttg ctgaatgata acatgacagc taccggcctc 720
 taccocatcg tacatctgaa gggcgaagat atcgagatag cttttaccca taccggacag 780
 tacggagagg agtactactc atttgtaaac ggtcagcata ccaactcagg aggtacccat 840
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 gactatactg acatccgtaa cggactggta gccgccattg ctgtcaacgt ggaagaacct 960
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 gatggtatgc acatccgctt gttgctgatt actttcttcc ttcagtctct cccgatctg 1560
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 aatccggaaa tcaccgcttt taaaggtttg ggggaaatct cgcccagcga attcagacac 1740
 tttatcggca aagatatcg tctcgaacaa gtatcgtgc gcaaaacaga cacggtaaaa 1800
 gaactactcg aattttacat gggtaagaat acaatggaac ggcaaaactt tattattgat 1860
 aatctggtta tagaagaaga catcgcataa 1890

<210> 2165
 <211> 483
 <212> DNA

<213> B.fragilis

<400> 2165

tctgggttata	gaagaagaca	tgcataaac	atgagaagag	ctatctttcc	gggaacgttc	60
gaccgcgttta	ccatcggaca	ctactccgta	gttcaacgca	ccctgacatt	catggacgaa	120
gtgggtcatcg	gtatcgggtat	caacgaaaac	aagaatacat	actttccgat	cgagaaacgt	180
gtggaaatga	ttcgtaaagt	ctataaagac	gaaccccgga	tcaaggtcga	atcttacgat	240
tgcctgacga	tgcactttgc	ccgtcaggta	gatgcccaat	tcatcgttcg	cggtatccgt	300
accgtgaaag	acttcgaata	cgaagaaaca	attgccgata	tcaaccggaa	actggccggc	360
attgaaacca	ttctgttatt	taccgaaccg	gaattgacct	gtgtcagctc	taccatcgtc	420
cgcgaactgc	ttggctataa	taaggatatc	agtatgttca	ttcccaaagg	gatggaaatg	480
taa						483

<210> 2166

<211> 441

<212> DNA

<213> B.fragilis

<400> 2166

cataacacca	gaataacttc	ttcgcgtccgt	gtgatgggtgc	gtttggcaaa	aaataatccg	60
aaaaaccaga	gcagaatgcc	cgaaccgacc	aaggtgaaaa	ggtcgaagtt	attgatgcct	120
gtcagccgca	agggagtgat	ggaagcactg	catcccaata	caaagaagat	gttgaacaga	180
ttactgccga	tcacattacc	gatggctatt	tccggattct	ttttcaaggc	agccactatc	240
gatgtagcaa	gttccggtag	ggaggtagct	cgggctacca	gtgtgagtc	gataacagat	300
tgcctgacgc	caaggtgccg	tgcgatgttg	cttgctccct	ctacaaacca	ttgtcccccg	360
aaaataagtc	cggccaatcc	gcccagaatg	aaaagtagcg	atttccacat	cgggaggcct	420
ttgatttcct	cttccggttg	a				441

<210> 2167

<211> 1146

<212> DNA

<213> B.fragilis

<400> 2167

atacaagcta	tggccattac	aattaaaaag	gtatcgacaa	aaagagaact	taaaaaatc	60
attcgtttta	attacgaatt	atacaaagag	aatccttatt	ccgtacctga	cctctacgac	120
gacatgctga	atacattcaa	taagaagaaa	aatgcggcat	tcgagttctg	tgaggccgag	180
tacttttctgg	cttataaaga	cggaaaaatc	gtagggcgca	tcgcagggtat	tatcaatcac	240
cgtgccaatg	ccacttgga	caaaaaagat	gtccgtttcg	gttggatcga	cttcacgcac	300
gaccttgaag	tatcttccag	acttctgcaa	accgtagaag	aatggggtaa	atccaaaggg	360
atggagaaca	ttcagggacc	tcttggattt	accgacttcg	acgcagaagg	tatgctgac	420
gaaggattcg	accaactcag	taccatggca	accatctaca	atcatcccta	ctatccgcaa	480
cacatggaga	aactgggatt	tgagaaagat	gccgactggg	tggaatacaa	aatttatatt	540
cctgacgcca	tccctgagaa	acaccagcgc	atatccgatc	ttattcagcg	taaatataac	600
ctcaagataa	agaaatatac	ctcatccaga	aagattgcag	ccgattacgg	acaagccatc	660
tttgagttga	tgaacgaagc	ttatagtcgg	ctgtacggat	actctccgct	ttcgcaacgg	720
caaattgacc	aatatgttaa	aatgtacctt	cggattgtcg	acttgcgaat	ggtaaccctg	780
atcacagatg	cgggaagacaa	gttaattgcc	gtaggcattt	caatgccttc	actttcggaa	840
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taccaaaaca	aaggtgttaa	cgctttgtta	ttttccgatt	taattccggg	ttatcaaaaa	1020
ttagggtttta	tctttgcaga	aagcaacccc	gaactggaaa	tgaacggaaa	ggttcaggca	1080
caatgggaat	actttaaaac	cgaacaacat	aaacgtcgtc	gtgcgtttac	taagaagata	1140
gactaa						1146

<210> 2168

<211> 972

<212> DNA

<213> B.fragilis

<400> 2168

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ggtgccaact	gcctgacaga	tgggtgctgc	tcogtagcca	agcgattccg	tattccttcc	120
atcgtaatcg	gcctgactat	cgtagctttc	ggaacttccg	ccccggaact	gaccgttagc	180
gtatcgccg	ccctgaaagg	tagcgcggac	atcgccgtag	gtaacgtagt	gggaagtaat	240
atcttcaata	cattgatgat	cgtcgggtgc	accgctctat	ttgctcctat	cgtaattacc	300
cggaataact	tgcggaaaga	gattccgcta	tgcattctct	cctccatcgt	cctgctgata	360
tgcgccaatg	acgtttttct	gaataaagct	tcagcaaca	tactaagcat	ctcggaacgga	420
ctgattctgc	tctgtttctt	caccatcttc	ctgggctaca	catttgccat	agcctcacc	480
acaaacaata	ctcaaccgga	agaggaaatc	aaaagcctcc	cgatgtggaa	atccgtactt	540
ttcattctgg	gcggattggc	cggacttatt	ttcgggggac	aatggtttgt	agagggagca	600
agcaacatcg	cacggcacct	tggcgctcgc	gaatctgtta	tcggactcac	actggtagcc	660
ggaggtacct	ccctaccgga	acttgctaca	tcgatagtgg	ctgccttgaa	aaagaatccg	720
gaaatagcca	tcggtaatgt	gatcggcagt	aatctgttca	acatcttctt	tgtattggga	780
tgcagtgcct	ccatcactcc	cttgcggctg	acaggcatca	ataacttcga	ccttttcacc	840
ttggtcgggt	cgggcattct	gctctgggtt	ttcggattat	tttttgccaa	acgcaccatc	900
acacggatcg	aaggaagtat	tctggtgtta	tgctatatag	cctacaccac	ctatctgata	960
tatcagattt	ga					972

<210> 2169

<211> 921

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (795)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2169

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ctacaggcac	agaacttttg	ctcacccgcc	atgcgaaaat	tacaactggc	agagttcgcc	120
atctctaatt	tatatgtaga	tacgggtcaat	gaaaacaaac	tgggtgaatc	ggccatcata	180
gaaatgctgg	cacagctcga	ccttcattcc	acctattcgg	atgccgaaga	ggtgaagaaa	240
atgaatgaac	cgctccaagg	caatttcgaa	gggatagggt	tacagtttca	gatgatcgaa	300
gatacgttgc	tcacgttaca	accggtgagt	aatggcccg	ccgaaaagg	aggtatcctg	360
gcaggagacc	gtatcatcgc	ggtgaatgac	acagccatag	caggcgtaaa	aatgggaaca	420
gaagaaatca	tgggacgcct	gcggggcccc	aaagattcga	aagtaaacct	gaccattatc	480
cgcagagggt	tgaagaacc	gcttttattt	aatgtaaaac	gagataaaat	tccaatcctc	540
agcctggatg	ctgcttatat	gattcagcct	aaaataggat	acatccgtat	caaccgtttt	600
ggagcaacta	ccgccgaaga	gtttctaaaa	gccctgaaag	agttacagaa	aaaagggatg	660
aaagacctga	ttctggacct	gcaaggcaac	ggaggtgggt	atctgaatgc	cgccatcgat	720
ctggcaaacg	agttcctggg	acaaaaaaa	ctgattgtct	acacagaaag	accttctgca	780
caacgcaatg	aagtntttgg	ccaaggcaac	ggaaacttcc	gtaacggacg	tctggtggaa	840
ttggtagaca	aatattcgct	ttgggcagtg	aaaattggga	caggtgccat	tcaagattgg	900
gaacaaaagga	atggtgggta	g				921

<210> 2170

<211> 627

<212> DNA

<213> B.fragilis

<400> 2170

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atgctgttat	tgaacttgct	ttttatgggt	ataggtctag	taactgcca	aactcagaag	120
gtaacagggt	ttgttatatt	tgaagaagac	gggcaaccag	ttgttgagc	ctctgtattg	180
gctaaaggca	ccactgtagg	tgattattact	gatgtagatg	gtaaatctac	attatctggt	240
ataccaagtt	ctgcaaagac	tttgcagatt	tcatatattg	gtatgcagac	cgctgaggta	300

gcaattgcac	ctaattattag	agtaatat	aaaacagact	caaaagcact	tgacgaggtt	360
gtggtagttg	cttacggaac	acaaagtgt	cgtacgggtga	ccgcatctgt	atctactgta	420
agagcggatg	ctttgaaaga	tgtgccaaagt	gtaagttttg	atcagatgct	tcaggggacgt	480
gcgtcaggtg	ttagtatcac	cactccgtca	gcagggtgtag	ggcaggcccc	gattgtgctg	540
gtacgtgggtg	tgaactcgat	tacttccggt	acttctctct	tgtatgttgt	cgatgtcttc	600
accgggggtg	caatgattgc	tcgtggg				627

<210> 2171

<211> 1197

<212> DNA

<213> B.fragilis

<400> 2171

ttaaaaataa	aggaaatgga	taaaattatt	tacagtttgg	tgtataatag	gaaaaagagc	60
ctgaataaaa	agggtagtgc	attagtagac	gttgaggcct	atttaaagag	aaaaaagaaa	120
tatttctcta	ccaaagttta	cttgagtccc	gatcaatggg	attttaagaa	gagaatgggt	180
aagaaccatc	ctaattgcaga	tgtatcaaat	cacatgcttt	acgagtttat	ggcagaaata	240
gagaagaaa	agttgggatt	gtggcaacag	gggaaacaga	tttcatttga	ttcattaaag	300
aattctatgg	aaaatcaaga	cgacagcact	tcattttattg	cattttttccg	caacgaaata	360
gcaaaatctt	cattgaagga	aagtacaaaa	cgcaatcatc	tctcaacatt	agaattatta	420
aggagttata	agaaggatgt	gtcattttct	gaattgactt	ttgaatttat	atcctcattt	480
gatcactatc	ttcagcaaaa	aggatatcat	actaatacaa	ttgcgaaaca	catgaaacat	540
ctaaagcgtc	atattaatgt	agccataaat	aaagaatata	tggagatata	gaaatatgcc	600
tttcggaaat	ataagatcaa	gagtgttgag	aataatcata	ctcacctctc	tccggaggaa	660
ttaggaaaga	ttgaaagtct	ggaattgggg	ggacggttca	ctaaactgga	aaagaccaaa	720
gatgctttcc	tcttttgttg	ttatgcagga	ttacgatatt	ctgacttcac	caacttatcc	780
cctgaaaaca	tagtgaaaat	gcacaaagaa	acttggctta	tttataaatc	tgtgaaaacg	840
aacacggaag	tacgtcttcc	gctttatctt	ttatttgagg	ggaaagggaat	agaagtcttg	900
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aaggagctat	tgatcatagc	aaaattatca	gggctaaata	aacgtatttc	gttccatacc	1020
gctcgccata	ccaatgccac	attattaata	tacagtggag	tcaatattac	tactgtacaa	1080
aagctatttg	gacataaaa	tgtgaaaaca	acacagggtt	ataactaatat	aatggacata	1140
actattgtaa	gagacttaga	aaagtctaaa	aataatcgca	aagtatctta	tatgtaa	1197

<210> 2172

<211> 471

<212> DNA

<213> B.fragilis

<400> 2172

aaacttaaac	cgatgaaaaa	gaatctttat	tggatggcag	cagcattcat	cactttaact	60
gctgtaggtt	gtacaaatgc	gaagaaagcc	gatgtatctg	cgccaggcag	cgataccaca	120
caagtgatag	atatgcatac	tgccgaaacc	tctctcgatt	actatggagt	ttacaaagggt	180
acggttccgg	ctgccgattg	tccgggcata	gaactgaccc	tgacattgaa	gaaggatcgc	240
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acgtttacgg	tgaaggataa	tctgcttacg	cttactgaaa	aaggaggcga	agtgtcttac	360
ttcaaagtgc	aggaaggcag	cctggtgatg	ctgaacaatg	agaaacagcc	tgctaccgggt	420
actttggccg	atgcctatgt	attaaagcag	gaagagggtg	tcctcgattg	a	471

<210> 2173

<211> 2217

<212> DNA

<213> B.fragilis

<400> 2173

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gcggttatgt	tgctcctttt	cggggcgctt	atttaccatg	ctatcgagga	gggagatcgt	120
ttttcacacc	atgcggtagc	atcgtcaact	gtcgcagaag	acactccttt	cactatgttt	180
tgctcagttt	tcaccgacaa	cttaccatcat	cccttgagta	tattgctgat	acagatcatt	240

gctgtcctgc	tgatggtaag	gcttttcggc	tttctgttca	agcacatcgg	gcagcccg	300
gtgattggtg	agattgtggc	gggtattgtg	ttggggcctt	ctgtgttagg	ctattttttc	360
ccagatgtgt	ttcaagccct	tttccctccc	gaatctctta	ccaatctgga	gttgcctgagc	420
caggctcgac	tggttctttt	catgttcgta	atcgggatgg	aactagactt	tagcgtactc	480
aaaaacaaga	taaacgaaac	attgggtcatc	agccatgcgg	gtatattggt	tccgttcttc	540
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cgcattcattc	aggaacggaa	tatgacaaag	acttcttttg	gaactttggc	cattgcttcg	720
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acgctgatga	atacacgggg	actgatggaa	ctggtggcac	tgaatatcgg	atacgaaatg	1320
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aaatattcgt	ctcagatccg	gacacggcct	tttagtggtg	ctgccaatct	gacttcggca	2100
gcgaaggatg	gcttgcttgt	gatgagtcac	ttatcttata	cgaagctgtc	cgaagaagaa	2160
gaggtgttcc	gcgatttgcc	ttcactgttg	gtcatccgga	ggcctaagaa	gggttga	2217

<210> 2174

<211> 354

<212> DNA

<213> B.fragilis

<400> 2174

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caaagtctga	acgagcagat	gttgcctggaa	ctaaccggg	cggccaataa	tcttgatgag	120
gcgaaactag	aaagcgagct	tgccgaccgt	tctctccaac	aggccgagga	aaacaggcgt	180
gtcagcaaaa	accaatatga	agtgggattg	gaaacccttt	ccgaccatct	ggaaggacaa	240
gctttatggc	aacaggcata	cgaacgaaa	gtgaatgcac	atttccagct	ttatctgaat	300
tatgtggctt	atttgaaagc	ggcagggtata	ttatataata	agattaattt	ataa	354

<210> 2175

<211> 546

<212> DNA

<213> B.fragilis

<400> 2175

tatgacatgg	caaaaatata	aattaaatct	gagaaactca	caccttttgg	aggaattttt	60
tcaatcatgg	agaaatttga	ctccatgctt	tcaccgctta	tcgactcaac	actgggtcag	120
agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcgtt	180
tatttctgtg	gcggctcatg	cgtggaagat	gtaacgtcac	aactgatgcg	ccatctctcg	240
tatcatccta	cccttcgtac	atgcagctct	gataccatcc	tcagagccat	caaggaaactg	300
acacaggaaa	acatctccta	tacttccgac	caaggcaaga	cctatgattt	caatactgca	360

gacaaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatac	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
ccgacctaca	aaaagttcct	cggctacagg	cctggcgat	atgttatcgg	tgacaagata	540
gtttat						546

<210> 2176

<211> 252

<212> DNA

<213> B.fragilis

<400> 2176

gttcctgagc	aacaaaaagt	tgcccaggat	tttgccatgt	cagaattttc	acttatctta	60
gtgttgcaaa	aagaaaacaa	gcaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaact	cacacctttt	ggaggaat	tttcaatcat	ggagaaat	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 2177

<211> 1077

<212> DNA

<213> B.fragilis

<400> 2177

cgattaaaaa	aacagaataa	aagaatgact	ggaatagaaa	aaacagtaac	gaataggtcg	60
ggggccggag	ctttggtgct	ctgtaccata	cttttttgct	tgtgcgcctg	tacggaagat	120
gcttcctata	cggcaggagt	ctggtaccgc	cgttcggact	tcgacggggg	ggcacgtacc	180
gatgctgccg	gtttcacgat	tggcaacaaa	ggatatact	gtggagggtta	caacgggaaa	240
acaacccgtc	tggccgatac	ctgggagtat	gacatcgaca	atgactgggtg	gacgcaacgt	300
gccgatatgc	cgggtacggt	tgggaatgcc	gctacagggt	tcccgggtggg	gaataaagg	360
tacatcacta	cgggttacaa	tcccgatcag	aagtatctgg	ccgatacgtg	ggagtacgat	420
cgggagacaa	atacctggcg	gcaaatggat	gacttcaaag	ggggagcccg	ttattatgcc	480
cttggttttg	gcattgataa	ttatggctat	gtagggtaccg	gttacaatga	taactatttg	540
aaggactttt	atcgattcga	tctactgcg	gcagccgggt	cgcaatggac	tatcgtgaat	600
ggtttcgggtg	gacaaaagcg	tcagggagcc	acagcctttg	tgatcaatgg	aaaagcctat	660
gtctgtggag	gacagaacaa	caattccgat	gtgtcggact	tttggcggtt	cgatccttct	720
cccggccacgc	cgtggacaca	attgagagat	attgccata	ccagcgacga	tgattatgat	780
gacgattata	cttctattgt	cggttcttac	ggagtcagtt	ttgtgatcga	tggaanaagcg	840
tatctgactt	tgggctctac	tgccggagga	agttattatt	cgaactattg	gatctatgat	900
cctgaaaccg	atctttggga	aggagacgac	ctgacagcgt	ttgaaggcag	tacacgcac	960
catgctgtct	gtttttctac	cggaaaccgg	gggacatttg	cgacaggcgg	cagtggatcg	1020
agttcatact	ttgatgacac	ttgggagttg	aagccttatg	aatatgaaga	agaataa	1077

<210> 2178

<211> 1209

<212> DNA

<213> B.fragilis

<400> 2178

cccataaaaa	gaaacctgat	tctattgctt	actctttgcc	actccacttt	attaatatat	60
agtcaaaaata	ccaccaactc	cccgaacttc	atgttcggac	tgggcgaact	ctccaccgga	120
gaaggcggac	aatactccgg	actgggtgga	gcaggaattg	ccttgcaaaag	ctacaacttc	180
ctgaatacag	ccaatccggc	ctcacttacc	gccatcgagg	gacaacgttt	cctgatagac	240
gccggagtaa	tgggagctta	caaggtatat	acacaaaccg	ggacgagcaa	tactcgtctg	300
gtaggtaacc	tgaacaacct	gagcatcgg	tgcgcacat	ctccacgctg	gtatggagcc	360
gtgttcatgg	caccggtcag	tagtgtaggc	tatgccatca	caactggatca	ggacatcacg	420
ggaaccggca	gttccaccgt	atcgtcactc	ttcgaaggcg	aaggcggatt	gtctaaaatg	480
ggaatcagta	cagcctatcg	gcttttcaag	ggattttctg	tcggcgctaa	cctttcctac	540
gtaaccggga	ccatcaaaca	gacagaaacc	cagggaagta	tcaatgtgga	agaaagctca	600
tacaagcatg	ccttttatgc	tgacttcggc	ttgcaatata	aattttcact	gagccggaat	660

aagtacctcg	tggcaggagc	tgtatacggg	tattcgcaag	acctggcaca	agacaatacc	720
ttgtcggtaa	gcagcacatc	gggcaacgaa	tcgattgacg	aaagccaacg	ccatgtgcgc	780
caatgcctcc	cccagtttgt	gggagcggga	cttgcataca	acagtcgcga	ctggacgctg	840
acagttgaat	ataaatatac	ggattggagt	cgtatgaagt	catcaciaag	caacgtccgc	900
ttcgagaacc	aacaccgatt	gtcggcaggc	acagcctata	cggcaggcaa	tatttaccgg	960
aatccggtga	aactgttact	cggagcgggc	gtcagcaact	cttatatagt	cattcagaag	1020
aagaaagcaa	ccaactacta	tgtcagtgcg	ggaagcaact	tcactctgta	caacggcaac	1080
gttctctccc	tgggagtgaa	atacagcgac	cagcttcac	tgcccaacgg	catgcaacgg	1140
gaacggggag	tcacactctt	tttcaatttt	accttttcgg	aacggaccta	ccgggcgaag	1200
atccaataa						1209

<210> 2179

<211> 1401

<212> DNA

<213> B.fragilis

<400> 2179

atcgttccga	ttagtcgac	ctttttttac	agggaaaata	aatcgtcttc	ttttgcggca	60
aaaatgatcc	gattcatgaa	acgaaaaaac	ttatccttgt	tttttatcac	tctttttata	120
tcactcctcg	cctcttgtcg	tgacgaactg	tcgacggcgg	gaggcaaatg	ggtggaaagc	180
tccctgcgaa	ccatacaaac	cgatacctgt	accgtacgcc	tcagcactat	cctgagtgac	240
tctcttgcca	catcgggtga	cactgtctgc	cagataggaa	ccattgacga	tcccgtctgg	300
ggaaagatag	aggcagcttt	ctatgtcgaa	tatgacgtac	cgacagtttc	attcagtga	360
aatgcccagt	acagattcga	ctccattacc	atccggttct	attcatcggg	taactatctg	420
ggagataccc	taagtccgca	acgtatctca	ctgcacagtc	tatcggagaa	tctgtcattg	480
gacgaagggt	atctgtacac	tacttcgaag	gtgtcctatc	actccactcc	cctggcttcc	540
tttactttca	ccccacccc	gggcgaaaca	atccgggaac	atgaaatccg	cctccccgac	600
gaatggggag	tcgagtgggt	cgaacatttt	caggccgggt	cacgtgagat	ggagtgcgaa	660
gagtaacttc	gcgactatct	caaagggtatc	gcgtttattc	cgaagaagg	gggaaattgt	720
gtcaacgggt	ttatgggtga	cgactcaagc	ttatgcatca	ctctctatta	tcacagacg	780
gaaacgggat	ccacgggaact	gtccgccgat	tttttaccga	acagcgatct	gaggttcaac	840
caggtcagtt	gtgaccgcag	cgggaccgca	ctctcctctt	tgcaaagtgg	actcaacaac	900
gggcttcctt	cagaaaaatc	ggagcaccag	tcctatctgc	aagggttgac	cggcatgtat	960
atcaatattg	atcttccatt	tctcaatgac	ctgcgtgccg	aaggcaggct	ggtgaccatc	1020
gaaagcgccc	tgctccggct	atatccggta	aaagggaact	atggcaaaca	gtatcccctt	1080
cccgaatcgc	tgacactgta	tacagccgat	gaaaacaatg	tgacggaaga	tgtagtgact	1140
gatatttcag	gcagttccgt	acaaaccgga	agcctgggtga	cagatgaaat	gatgggagaa	1200
gatacctatt	actctttcga	tatcacctct	ttcctgcaaa	gcaatctggg	aacggtagga	1260
tacaaccgga	agattcttca	actgatgctc	cgggacaact	tattcttcac	tacctgaac	1320
ggagtgcgtat	tcggggatgc	cggacatccg	gacagcaatc	ccgtgaaact	aacctactt	1380
tataaaacat	ataaccatg	a				1401

<210> 2180

<211> 264

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (27), (44), (46), (159)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2180

ggccgcgcgc	cgaggcccat	cgctgcntgc	accatgggag	agananctgt	ggacgaggaa	60
gtaccgcgtac	ttttcgagta	tcctttaatg	aacgatgtca	tgccgattgt	aaaggaggag	120
gaaccggaga	ttctgtctca	gtcgtatgat	atggatgcna	gcatgacgct	tcgtatccgg	180
cagtcggcaa	tgccccgttt	aagggtcccg	ctggagaaag	tggagactgc	ccgcattaca	240
gatgaacagg	aaggaaatgg	atag				264

<210> 2181
 <211> 1260
 <212> DNA
 <213> B.fragilis

<400> 2181

tctgcagttc	ttatggcaac	aataaaacca	tttaaaggca	tccgtcctcc	gcaggacttg	60
gtagaacagg	tcgcttcacg	tccgtatgac	gtgctgaatt	cagaagaggc	tcgtgcagaa	120
gctgccggga	acgataaatc	attgtaccac	atcattaaac	cggaaataga	ctttcccgtc	180
gggacagatg	aacatgatga	gaaggtgtat	gcgaaagcgg	cagagaattt	ccgtctgttc	240
cgtgataaag	gatggctggt	gcaggatgac	aaagagaatt	attatatcta	tgccagacc	300
atgaatggca	agacacagta	tgggctggtg	gtgggtgctt	acgtgcccga	ttatatgaac	360
ggtgtcatca	aaaagcacga	actcaccgg	cgtgacaagg	aagaagaccg	catgaagcat	420
gtccgtgtga	acaatgccaa	catcgaaccg	gtgttctttg	cttatcccg	caatgcggtg	480
ctcgatgcc	ttatccgcaa	gtatacggct	caaaagccgg	tatacgattt	tattgctccc	540
ggtgacggat	tcggacacac	tttctgggtg	atcgacaaca	gcgaagacat	tgctgtcatc	600
accaaggagt	ttgctgccat	gccggcgctt	tatatcgccg	acgggcatca	tcgttcggct	660
gocgctgccc	tggtaggggc	cgaaaaggca	aagcagaatc	ctaatacatc	cggagacgaa	720
gaatacaact	atctcatggc	cgtatgtttc	cccgccaacc	agttgactat	tatcgattac	780
aaccgggtgg	tgaaagatct	caatggcttg	acgcctgccc	aatttctgac	cgcccttgga	840
aagaattttg	agatcgaa	gaaaggtaaa	gagatttata	aaccaaatgc	gttgacatac	900
tttgcgctct	atctggatgg	caaagtgtat	agcctgacag	ccaaaccggg	tacttatgac	960
gataatgata	ctataggtgt	attggatgtg	accatctctt	ccaacctgat	tctggacgaa	1020
attctgggaa	tcaaggatct	gcgttcggat	cgccggattg	actttgtagg	gggaatccgc	1080
ggcttgggcg	aattgagcag	acgggttgac	agcggcgaaa	tgaagtggtg	tttggccctt	1140
tatctgtttt	caatgaagca	attgatggat	attgccgata	caggaaacat	tatgcctccg	1200
aagactacct	ggttcgaacc	taaactgcgt	tgggggctgg	tgatacacga	gctcgaataa	1260

<210> 2182
 <211> 636
 <212> DNA
 <213> B.fragilis

<400> 2182

aatatgagcc	aattattttc	taaaaagaat	aaagaagtat	tcgctactcc	actgggattg	60
aataaccggg	taaccgtgca	ggtgctcggt	atctgttcgg	cactggctgt	aacggccaaa	120
ctggaaccgg	ctatcgtgat	gggtcttttc	gtaactgtga	ttacggcttt	ctcaaacgtc	180
gttatctctt	tgctgcgtaa	gacgattcct	aaccgtatcc	gtatcatcgt	acagttgggtg	240
gtagtagccg	cattggtaac	tatagtaagt	gaggtgctga	aagcgtttgc	atacgatgta	300
agcgtacagc	tttcgggtata	cgtaggtctg	atcattacaa	actgtatcct	gatgggacgc	360
ctcgaagcgt	ttgccatggc	aaacgggtccg	tgggagtcac	tcctcgacgg	tgtaggtaac	420
ggtctgggat	atgccaagat	cctgatcatc	gtggctttct	tccgcgagtt	gctcggtatc	480
ggcacattgc	tcaacttccg	tattatccct	gagtcattct	ataagatggg	ttacatcaac	540
aatggtttga	tgttgatgcc	gccgatggca	ctgatcatct	gtgcatgtat	catctgggtat	600
cagcgagcc	gctgcaaaga	actccaggaa	aagtaa			636

<210> 2183
 <211> 495
 <212> DNA
 <213> B.fragilis

<400> 2183

tttgtggcga	attcgttttg	tgttccggac	tattcaaata	tgtacgtttt	tccgtatctt	60
tgccgccgaa	gtaattatta	tcaggaaaca	gatatgggac	gaaaagaaga	atacaaattg	120
cagaacgaac	aattcatgca	gacattacgc	accgaagcgg	atgtacacga	attgccatgc	180
ggcatattat	ataagggtttt	ggagggaagg	accggcgag	ccacgcccgc	ttccaacagt	240
gtgggtgtcg	ttcattacaa	gggcactctt	atcaatggac	gtgaatttga	taattcctgg	300
aagcggaact	gtcccgaagc	ttttcgtctg	aacgagggtta	tcgaaggatg	gcagattgct	360
ctgcaaaaaga	tgcgggtggg	agatcactgg	atcgtctaca	tcccttataa	tatgggctat	420

ggcacacgta ccagtgggccc gattccggct ttttcaactt tgatttttcca ggtacaatta 480
ctgggtatag cttga 495

<210> 2184
<211> 1290
<212> DNA
<213> B.fragilis

<400> 2184
agtaaaaaga ataaaaacaat gacgtcttta atattagcaa gtatcggagt cttccttctg 60
gtgatcatcc tgcttgtcat tatactgctc gttgcgaaga gctatctttc tccttcgggc 120
gaggttacga ttacgatgaa tggagagcaa caactgaaaa catctcaggg tggtaactctg 180
ctgggtacgt tgtctgccaa caatgtgttc ctttcatcgg cttgtggtgg taaggggttca 240
tgccggacagt gccgttgcca ggtgctcgaa ggccgtggcg agattttgcc taccgaaacc 300
ggtttcttct ctcgtaaaga acaggccgat cactggcgcc tcggatgccca ggtgaagggtg 360
aaacaggata tgtctatcaa gatcgacgag tctatcctgg gtgtgaaaga gtgggagtgc 420
gaggtgatct cgaacaagaa cgtggctacg tttatcaaag agtttatcgt ggctctgcct 480
ccgggcgaac acatggactt tgtgccgggt tcgtatgcc agatcaagat tcctaccttc 540
tcgatggatt atgataagga catcgataag agcctgatcg gtgacgaata tcttcggca 600
tgggagaaat tcggtctgct cggcctgaag tgccgcaacg acgaaccgac catccgtgct 660
tattctatgg ccaactatcc ggctgagggt gaccgcatca tgctgactgt acgtatcgt 720
actcctcctt tcaaaccgaa agatcaggga ccgggcttta tggatgtgat gccgggtatc 780
gcttcttctt acatctttac gctgaagccg ggtgacaagg tgaccatgag tggaccttac 840
ggtgacttcc acccgattct ggattcgaag aacgaaatga tgtggatcgg tgggtggtgca 900
ggtatggctc cgttgcgtgc ccagattatg cacttgacca agacgctgca tatcactgac 960
cgtacgatga actacttcta cggtgcccgt gcactgaacg aggtgttcta tctggaagac 1020
ttcctgcaga ttgagaaaga cttcccgaaac ttcaagttcc acctggcact cgaccgtccg 1080
gaccctgctg cagacgcagc cgggtgtgaag tatacggcag gtttcgtaca caacgtgatt 1140
tacgaaactt atctgaagaa ccatgaagct ccggaagaca tcgaatacta catgtgtggt 1200
ccgggccgga tgagtaaagc tgtcgagaag atgctcgacg atctcggtgt tccgtctaag 1260
aacttgatgt tcgataactt cgggtggataa 1290

<210> 2185
<211> 456
<212> DNA
<213> B.fragilis

<400> 2185
aaaaagatag atagaatggc atttgaagca acaaaaagag agtggagcga gttgtacgtc 60
tttttccgtc tgctggcgga tggaaaagta tcgcttgga ctccgcaggc aaagaaagaa 120
gatgaaaagt accggcccat tgcaatgata cagcgtgaag agcatgatgg caccggcgt 180
tactatattg aagaagaggt catccggatg gaaggtgaga aggtggagaa aagtattccc 240
cgtgaggact ttgcaacagt ggccgacctg attctggacg cgattaaaaa ttcttcggcg 300
gatgaagtta cgtcaccgca cggggtggag gagttcctgg acgaggcagg tatctttgat 360
ctggaagccc ggacggagga ccgtaccgac ttctcgattg ctttctggca tctgaggct 420
ccgttggcgg gttgtcttcg ccacgggcca ggggag 456

<210> 2186
<211> 1416
<212> DNA
<213> B.fragilis

<400> 2186
tccttcggag atcatcataa aagaaactgc tttcgggttg tccggaagca gttttttttt 60
atcttttgtt cattattcaa aaatgtggaa aaaacaatga atggtttgaa ggatatactc 120
gaaaggttga aaatagaaca actcaatccg atgcaggaag cgtctgttga ggcatttgat 180
aaagggtggcg aagatttgat attactttcg ccacagggtt cgggcaagac cctggccttt 240
ctgttgccgc tggtcggcag tctgaaggcc gacgtgaaag gaggcgaggc cgtgggtgctg 300
gtgccatcac gtgagttggc attgcagata gagcaagtgt tcaaggcgat ggggacggaa 360

ttcaaggcga	tgagttgcta	tggcggacgt	ccggcgatgg	aagagcaccg	tacgatgaaa	420
ggaatgcagc	cggcggttat	catcgggtacg	cccggccgta	tgaatgacca	tctctccaag	480
cagaacttcg	atgcaagcac	agtgagtcctg	ttggtgatcg	atgaatttga	taaatagctg	540
gagtttgggt	ttcaggaaga	gatggcaacg	gttatcggac	agttgcccga	cttgaaacgg	600
cgttttctga	cttcggcaac	agatgcggaa	gagattccgc	aatttacagg	actgaaccgt	660
acgataaagc	ttgatttctt	gacaaacgat	gtggaggaat	cacgttttgc	gttgatgaag	720
gtggtttcgc	ctgctaaaga	taagatagaa	accctctata	agctgctttg	cacactggga	780
agcagttcga	gcattgtttt	ctgtaaccac	agggatgcgg	tggaccgtgt	gagtgcctta	840
ctaaccgaaa	aaggagtttc	caatgaacgc	tttcatggag	gtatggagca	accggatcgg	900
gaacgggcac	tgtataagtt	ccgtaatggc	agctgtccgg	tgctgggtgc	tacggacctg	960
gctgcccgcg	gacttgatat	cccggagggtg	gagcatatca	tccattatca	tttgccgggtg	1020
aacgaagaag	cctttaccca	ccgcaatggc	cgtactgcc	gttgggatgc	gacgggtact	1080
tcttatctga	tactgaatcc	ggaggaacat	gtgccggatt	atataccttc	ggagcttgag	1140
atcttcgact	tgccggagaa	tacaccccg	ccggctaacc	ctcagtgggt	gactatttat	1200
ataggtaaag	ggaagaagga	caaattgagc	aagatcgaca	tagccgggtt	cctttataaa	1260
aaaggaaatc	tggcacgtga	ggatgtcggg	gcaatcgacg	tgaagatca	ttatgccttt	1320
gttgccgtgc	ggcgcccaa	gatgaagcaa	ttgctgactc	tgatccgtgg	cgagaagatc	1380
aaagggatga	aaacgggtgat	cgaggaggcg	gattaa			1416

<210> 2187

<211> 552

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (421), (422), (491), (508), (510)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2187

tatgggctat	ggcacacgta	ccagtggccc	gattccggct	ttttcaactt	tgatttttga	60
ggtacaatta	ctgggtatag	cttgaaccat	caaaaaaaga	ttccggatat	catgacagaa	120
gatacctata	agaccatcac	tgaagtctcg	gagggaaacat	ataccgagaa	acgaagcaaa	180
tttattgcca	tgcctctccc	ggttcgtacc	ttggaagaga	ttaaagtgc	tctggaggcg	240
taccagaaga	aatactatga	tgcccgcac	gtctgctatg	cctatatgct	gggacacgag	300
cgaagaatt	ttcgtgccaa	cgataacgga	gagccgtcgg	gtactgccgg	caaaccgatt	360
ctgggacaga	tcaactcgac	cgaattgacg	gatatactga	ttatgtgggt	tcgttattcg	420
nnagggatca	agttgggcac	tagtggactg	attgtggcct	atagggccgc	cgcgcgaggc	480
ccatcgctgc	ntgcaccatg	ggagaganan	ctgtggacga	ggaagtaccc	gtacttttgc	540
agtatccttt	aa					552

<210> 2188

<211> 645

<212> DNA

<213> B.fragilis

<400> 2188

gaaagtaaaa	gaaaaattat	ggaacaatta	ttaagtttat	tcgctccgctc	catcttttgtg	60
gacaacatga	tattgcctt	cttctctgggt	atgtgttcac	atctggctgt	gtcgaagaat	120
gtgaaaactg	ctgtaggact	gggtatcgcc	gtaactttcg	tattgggtgg	tacgttgccg	180
gtcaactact	tgtttcaaac	taaggtgctg	gctgccaatg	cgatcattga	aggtgttgac	240
ctcagcttcc	tgagttttat	tctctttatt	ggccgtatgg	ccggattcgg	ccaattggta	300
gaaatgggtg	tggaaacgctt	cagcccttcg	ctctacgctt	cactgggtat	cttctcttcg	360
ctgatcgccg	ttaactgtgc	catcatgggt	gcttccactgt	tcatgcagca	gagaatcacg	420
atggatccgt	cgaaccgcga	ggctattacc	ggcgtgggca	gtgctgtagt	atacgactc	480
ggttccggta	ttggctgggt	gctggctatc	gtcggctctg	ccgctatccg	cgaaaagatg	540
gcttactctg	atgttccgcg	tccgctgaaa	ggctctgggca	ttacgtttat	cacagtagga	600
ctgatggcta	tggcctttat	gtgtttctct	ggattgaaat	tataa		645

<210> 2189
 <211> 255
 <212> DNA
 <213> B.fragilis

<220>

<221> unsure

<222> (1), (2)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2189

nnattgcgcg	gtcccttcca	gccccgtggt	gaagacgggtg	ctgagatcgc	gggtgctgct	60
ttccagaatg	aattctctgg	caagaaggta	ttgaaagacg	gacagggttg	actggctgta	120
gagaaaaacg	gtaagggtgac	agaccctgct	tatcagggttg	acgggtatttc	gggtgggtaca	180
atcacttcga	aagggtgtgga	cgccatgatc	aaagcatgtc	tgagccagta	cgataaattt	240
ttaactaata	attaa					255

<210> 2190

<211> 1098

<212> DNA

<213> B.fragilis

<400> 2190

cgaaattgta	taacccaaaa	cactcatcaa	atgaaaaagc	ataatttcag	tgcaggccct	60
tccattctcc	ctgcggaagt	aatagaagaa	acagcgaaag	ccattctcga	tttcaacggt	120
tcaggctctt	ctgtgttggg	agtcagccat	cgtggcaagg	attttcaggc	agttatggat	180
gaagccgttg	ctttgtttta	ggaaataact	aacatccccg	aagggtattc	ggtacttttc	240
ctgggcggtg	gtgccagtat	gcagttctgc	atgggtgcct	acaacttcct	tgagaagaag	300
gcagcttacc	tgaacaccgg	tgtttgggct	aaaaaagcga	tgaaagaggc	gaaaggcttt	360
ggcgaaagtgg	ttgaggtagc	ttcttcggct	gatgcgaact	atacgtttat	ccctaaagac	420
tttaccatac	ctgctgatgc	tgattatttc	catgtgacca	ccaacaatac	gatttatggt	480
acggaattga	agggagatct	tgattcaccg	gttccgatgg	tagccgacat	gtcttctgat	540
atcttctccc	gtccggtgga	cgtttcgaag	tatatattgt	tctacggcgg	tgctcagaag	600
aatctggctc	cctccggcgt	tacattcgct	atagtaaaaag	acgatgcggt	aggcaagggtg	660
tcacgttaca	tcccagacat	gctgaattat	aagaccata	tcgacggcgg	ttccatgttc	720
aacacacctc	ccgtattgcc	tatctattcc	gccatgcaga	ctttgcgctg	gatcaaggct	780
cagggtggcg	tcaaagagat	ggatcgctcg	gctaccgaga	aggcagacat	gctgtatgcc	840
gagatagacc	gcaacaagat	gtttgtaggg	acagctgcta	aggaggaccg	ttcgcgcatg	900
aatatctgct	ttgtgatggc	accggaatat	aaggatctgg	aagccgattt	cctgaagtcc	960
gctacggata	aaggaatgtc	cggcatcaaa	gggcaccgct	cgggtgggtg	cttccgtgca	1020
tcttgctaca	atgcaatgcc	gaaagagagc	gtacaggcat	tgattgactg	catgcaggaa	1080
tttgagaaac	ttcattaa					1098

<210> 2191

<211> 984

<212> DNA

<213> B.fragilis

<400> 2191

atgacggcat	ttggtgtctg	cggtatcctc	tgtggtgaat	tctcccaaaa	tagaataaga	60
gaaatgaaaa	tacttgttgc	aaccgaaaaag	ccatttgcca	agattgcggt	ggatggcatc	120
aagaaagaaa	tagaaggagc	cggatttgaa	ttggctctgc	ttgagaaata	tacagataaa	180
gcccactgct	ttgacgcagt	gaaagatgcg	aatgccatta	ttatccgtag	tgacatcatc	240
gacgccgagg	tgctcgatgc	agcgaaagaa	ttgaaaatag	tagttcgtgc	cgggtgccgga	300
tacgataatg	tagacctgaa	tgcagctact	gcacacggtg	tatgtgtgat	gaatactccg	360
ggacagaact	cgaatgctgt	agccgagttg	gtgtttggcc	tgcttggtta	tgctgtccgt	420
aacttctata	acggaacatc	gggtacggag	ttgatgggaa	agaaactggg	tatccacgca	480
tacggtaatg	taggacgcaa	tgtggcgctg	attgccaagg	ggttcgggat	ggaactctat	540
gcttatgacg	ctttctgccc	gaaagatgtg	atagagaaaag	atggggtgaa	agccgtagac	600

tctgccgaag	agcttttataa	gacctgtaac	atcgtctcac	tgcacattcc	cgctacagcc	660
gaaacgaaaa	attccatcaa	tcatgatctg	ctggccaata	tgccgaaagg	ggctatcctg	720
gttaatacgg	cccgc aaaga	agtgatcaat	gaagacgaat	tgatccagtt	gatggaggaa	780
cggccggact	ttaaatacat	cacagacatc	atgcctgcgg	ccaatacgaa	gttcgccgaa	840
ctctttgccg	gacgttattt	ctcgactccg	aagaagatgg	gagcacagac	ggccgaggcg	900
aatatcaatg	ccggtattgc	agctgcacgg	cagattgtgg	gtttcctgaa	agagggttgt	960
gaaaagttta	gagtgaataa	gtaa				984

<210> 2192

<211> 333

<212> DNA

<213> B.fragilis

<400> 2192

attgttgaat	tctacaatct	gcgtggcggc	aaggaaacgta	tctttgacga	catgaacaac	60
ggattcgggt	ggagcaggct	ccccaaagtca	tcatggcgg	agaataactgt	ctttcttctg	120
cttactgcat	tgatacacia	tttctacaag	accatcatga	gcaggcttga	caccaaggct	180
tttgggctca	agaaaacgag	tgcataaaag	gcttttgtct	tcagattcat	ctccgtacct	240
gccaaagtga	tcatgactgc	aaggcaatac	gtgctgaata	tctacacaga	gaaccgagct	300
tatgcaaaac	ccttcaaaac	agaattcggg	taa			333

<210> 2193

<211> 261

<212> DNA

<213> B.fragilis

<400> 2193

atagtaactt	tatgtgtttt	aaccttttaa	cttttgtatc	aatggataa	aatgaaatc	60
ggcttgaatg	ccggaaaagt	ttggcaattg	ttgagtaaca	atgacaaatg	gagttatggt	120
aacttgaaaa	agaaatccgg	actgaaggac	aaggatttgg	gggcagctct	gggttggttg	180
gccagagaag	ataagattga	gtttgaacag	gaagaggaag	aactctatgt	ttacctctgt	240
gtaaatgttt	atattgggta	g				261

<210> 2194

<211> 186

<212> DNA

<213> B.fragilis

<400> 2194

atttatgaac	ccttttctcc	cggcaagctg	gcaaataaag	aatgggacgg	acgatcggat	60
ggagaaatat	gcagaaagct	ggaggaaaaa	aaaggagata	ttgcaggaca	caacaggaat	120
gcccttcccc	gtagtcggcg	aacttatact	gacacgttcc	tatccgttcc	tagccaaaac	180
acttga						186

<210> 2195

<211> 811

<212> DNA

<213> B.fragilis

<400> 2195

tatgacatgg	caaaaatata	aattaaatct	gagaaactca	caccttttgg	aggaattttt	60
tcaatcatgg	agaaatttga	ctccatgctt	tcacccggtta	tcgactcaac	actgggtcag	120
agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcggt	180
tatttctgtg	gcggctcatg	cgtggaagat	gtaacgtcac	aactgatgcg	ccatctctcg	240
tatcatccta	cccttcgtac	atgcagctct	gataccatcc	tcagagccat	caaggaaactg	300
acacaggaaa	acatctccta	tacttccgac	caaggcaaga	cctatgattt	caatactgca	360
gacaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatacg	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
ccgacctaca	aaaagttcct	cggctacagg	cctggcgtat	atgttatcgg	tgacaagata	540

gtctatatcg	agaacagcga	tggtaacacg	aatgtgcgtt	ttcatcaggc	agacacccat	600
aagagattct	tcgctcttct	ggaatcccag	aacatccgtg	taaatcgctt	cagggcagac	660
tgcggttcct	gctcgaagga	aatcgtcagt	gagatagaga	agcattgcaa	acattttctac	720
atccgtgccca	accgatgcag	ttcgctctac	aatgacatct	ttgctctgag	aggatggaag	780
acggaggaga	ttaacgcat	ccagttcgaa	c			811

<210> 2196

<211> 528

<212> DNA

<213> B.fragilis

<400> 2196

ttctatttct	atgtgttctc	ctttgggggg	acatcggttg	ttgatgccc	gactaaggga	60
atcggtgtcg	atggtgtgaa	gggcgggtct	ttatccgatg	tgaatattta	cttcagaaaa	120
gattccggtg	aaatcggatc	gacagaccga	aatggagaat	ttatgtttag	ccgtgatcag	180
ataacgataa	gtgataccat	tgtcttttct	catgtcgggt	actttccggt	gaagtgtaca	240
ttatccgaat	tacagcatct	tggatataaa	gtggttctac	atgagcatcc	ccaattgctg	300
catgaggtag	tggttagtgg	agagcgtcca	ccattcttcc	tggaaatggac	ttcactgtct	360
cctttaccca	aacctttata	ctctttcggg	ggatttctgc	atgcaggaaa	aatttatgtg	420
gttgcgggtg	acgaaacact	ggtccgaatg	gttactgata	aacacaggcg	gtcgacttca	480
cttctttcat	ttacgatgac	tgcttgtatg	cgatgggagg	agctataa		528

<210> 2197

<211> 348

<212> DNA

<213> B.fragilis

<400> 2197

tcagttaaat	atgcgatggt	taaagtaata	ttgtttccga	gccttctatt	ttgttttatt	60
attgatgcgc	actcttattt	taacactatt	taccgtaatc	aatatattaa	taagaggggg	120
aatgaaaaga	aaacagagcg	gccaataacc	cttgatccgt	taaggattaa	tctgacttac	180
gtcaatggca	attacatctc	gatgaggagc	tacatatatc	ccttgacagt	tacaccacc	240
cactatgtaa	agcgtattcc	tccagtagaa	aagtcctgca	ttttccacat	ccaaagcagc	300
cagttcgtat	atgcgcattg	tatctgtttc	aatatggtag	acctgtaa		348

<210> 2198

<211> 252

<212> DNA

<213> B.fragilis

<400> 2198

gttcctgagc	aacaaaaagt	tgcccaggat	tttgccatgt	cagaattttc	acttatctta	60
gtgttgcaaa	aagaaaacaa	gcaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcaccogt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 2199

<211> 342

<212> DNA

<213> B.fragilis

<400> 2199

ataaagttaa	attatagtgt	tgcggaatta	aggtttatta	aaacttttcc	gggatattat	60
tattttgcagt	atacatacaa	ggagcaagtc	ctgggtgaaa	tatggagtcg	gaaaacgaat	120
caaatcgat	cgagaagtat	cttgaccctg	cccaatcaat	ttacaacgct	ccgtggaatc	180
cggtttcggt	ttccttcggg	tactgtcatc	agattattac	cagattatat	aagtggaaat	240
aaaattgctt	tctttattcc	tgcggatgaa	gctatgggtg	aaattcccgg	gataaagata	300
agggaggatg	ataatccgat	attgatgggtg	atggagttgt	ag		342

<210> 2200
 <211> 486
 <212> DNA
 <213> B.fragilis

<400> 2200
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 aaagttgcat cgtacccgca aaaagattta tgtattgatg aacggaaagg agtgatgatg 120
 gaaacaaata agaagcatat ggaaaatgcg ttgaaacagg ccctccaaag gaggcagccc 180
 ggcagattgc cgtccaattt taattatcgg atgatggagc agatccgtct ggaagcggaa 240
 aaacaacaga agcgggaagga gagggtcatg ctgtgcggca tgattgcggg tatattgcta 300
 ttgttgggag tgggagtata tacgcttggt ttcaaattgg aattcaattt caaggagtac 360
 ttgtccggta tggatttttc tcatgctgat tcttcctgt tggctttcta tagctatatt 420
 gcaacgttgg tctgttgggt gctcggattg gattactggc ttcgtaagaa gaagtttcat 480
 tcttga 486

<210> 2201
 <211> 597
 <212> DNA
 <213> B.fragilis

<400> 2201
 acctataaaa gaacagacaa aatgaagatt gtggcgttta atggaagccc tcgtaagggt 60
 ggcaacacag agcttttaaat taaagaagtt tttaaaccga tacaggaagc cggatatagag 120
 accgaattag tacagttggg tgggaaacta ttgcgcggtt gtgcctcatg ttatacctgt 180
 ttcaagacaa aggacgggaa atgtgcgatt aagaccgatc caatgaatga gttcatccaa 240
 aaggcccagg aagcagacgg tattattctg gcttcgccta cttattacgg cagtgtgagt 300
 gccgaaatga aggcatttat ggatcgggtt ggactgacca cgatcgggtca gggacgtaca 360
 ctgacacgta aggtgggggc ggctgtaatt agtgccgta ggggcgggtgc tgtaacagtg 420
 tatgatgaac tgaaccgttt tatgctcgga agcggaaatga ttgttcccgg atctacctac 480
 tgggaatttcg gtattgggtga aatgccggga gaggtttttg atgacgcaga agggttgaga 540
 aacatgaaag acctgggagt gcagttggca tggcttctga aggcgatata taattaa 597

<210> 2202
 <211> 1020
 <212> DNA
 <213> B.fragilis

<400> 2202
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 gccctgacac gggctaaccg ggatcatgcc ttgggctatg ggcagattt gtggacagaa 120
 gaagctgtcc ggaaaattaa agaaacgttt gtagccgatt gtgagccact gtttgttttc 180
 aatggaacag gcagcaatgt cattgccctg caattgatga ctgcctcta caactctatc 240
 ctttgtgccc aaactgcgca catttatgtg gatgaatgtg gctctccggt gaagatgacc 300
 ggttgtcaga tccgtcctat cgccactccc gacggaaaac tgactccgca actgatcaca 360
 ccctatctgc atggctttgc cgaccagcat cattcccagc cgggggcat ttatctttcg 420
 gaatgtacgg aactgggtac tatttataca cccgacgaat tgaaagccat cacttcgttg 480
 gcccatcaat acggtatgtg ggtacatatg gacgggtgcgc gcatcgccaa tgcttgtgct 540
 tcgctggggc tttcattgcg agcgtgact gtggattgtg gtatcgatgt gcttagtttc 600
 ggtggaacca agaacgggct gatgatggga gagtgtgtga tcgtattcga tgattcgttg 660
 aagtccgaag cgcgtttcat acgcaagcaa tccgctcagt tggcatccaa aatgcgttat 720
 ctatcctgtc agttcactgc ctatctgaca gacgaactgt ggctgaaaaa cgcaaccat 780
 gccaatgcta tggcaaagcg tcttgccgat gccctggaac aggttcccgg cgtacgtttc 840
 actcagaagg tggaaaagcaa ccagttgttc ctgactatgc cccgtgccga aacagatcgc 900
 atgctgcaaa cttattttct ctattttctgg aatgaggaag ccgacgaaat acgtctggtc 960
 acttcatttg atacaacgga agaagatatc gatacgttta tccgtatact gaaaaattag 1020

<210> 2203

<211> 2211
 <212> DNA
 <213> B.fragilis

<400> 2203

acaacgtttg	gtccttccag	ccccgtggtg	aagacaagca	gctacatcac	agcacagaca	60
gtgattgaaa	atcccccttt	cgaaacacgt	cagggaagta	tacacacccat	ctcgaaaata	120
gaactctcgc	caacagaaac	ccgactgacg	atacggactg	tgttccgccc	gcaatggtgg	180
accagtctgg	acagcctgac	ttacatttac	gctcccgaaa	gcaaaaagca	actgtatccc	240
ctgcgcatag	aaggacgtaa	atttggcgaa	cagggtgaoga	ctcccgccctc	cgggtatcata	300
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ggcgaacagt	gcctgcttga	aataacacag	gaaaaagacg	gcaacctatg	tatcggaaaa	660
aacgggggaa	aagccaataa	gtatatccgt	gcccggcgctc	cacaaagaaa	ttatgctggca	720
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aatcacataa	ctaataaagg	cactcccgcc	gtagtcacca	tccatccgga	cggacgcttt	900
gaatcggact	tcgtcgtcaa	ttatcccgga	gtacatcacc	tctctatggg	caacaactgg	960
atgacgttct	atatcaggcc	gggcgagaca	ctgactgctt	atatcaattg	ggaagaccat	1020
ctggactatc	tacgccagag	gagactgaaa	cctatggtga	cagaaactct	gtacatggga	1080
ccttcaagca	gcataaatca	ggaactgatg	ccttgtgaac	cgctgttctc	aaaagactat	1140
cacatcatac	agaatgcata	caaaacgctg	acaccctctg	aattcaaaaac	acagcaggaa	1200
ccgatgtaca	agttgtggat	gcacggggtc	gactcgctgg	agcaatcgaa	aacactacaa	1260
cccgaagcga	tgcaaatgct	gaagaacgat	gtgatgataa	attacggcgc	ctggctcttg	1320
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ataaaggaaa	ccccggacta	ttatgacttc	ctgaaagcaa	tgccgttgaa	tgatgtccgc	1440
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ctcccgcaa	gctggcaaat	aaagaatggg	acggacgatc	ggatggagaa	atatgcagaa	1560
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ggcgaactta	tcctgacacg	ttcctatccg	ttcctagcca	aaacacttga	gaacgagaag	1680
aaggcttttg	ccctgctgga	cacactgaag	ggatatctgc	acgacccatt	cctggtagca	1740
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ccgcagggaa	aaggtagcga	cattatccgt	aaactgacag	cacettatct	gggaaaattt	1860
gtaattatcg	acttttgggc	aacgtcttgc	ggtccttgcc	gtgccagcat	cgaacaacat	1920
gctgatttga	gaaaagacta	ccgcaacagt	cccgatatca	agtttatctt	tgtcaccagt	1980
aatcaggact	cacctgaaaa	agcttacgaa	aactatgtgg	agaagcatct	gaaagaggaa	2040
accatcttcc	gccttccaca	aagcgactat	aactatctga	gggaactatt	ccatttcaat	2100
ggcattcccc	gttacgtatt	gttggatcgg	gacggcaaat	tgctggacga	gaacttcccc	2160
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<210> 2204
 <211> 561
 <212> DNA
 <213> B.fragilis

<400> 2204

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acagaatggt	tttctgcatt	tctcgatcgt	tacagccgctc	cgctttatgt	gctgattgta	120
caaatagtcg	gttggtccga	agatgcggaa	gagttggtcc	aggatgtatt	cctgaaagct	180
ttccggtgtc	tgggtagtta	tagaggggag	tgccgtttct	ctacctggct	ttatcggatt	240
gcttatacca	cgcccgatc	tgccacacgc	aagaaaaagc	aggagttcct	ttatatagaa	300
gagaacacga	tcaacaacgt	gcccgatgaa	aaagctgacg	atatacttta	tcctactgat	360
gatgaagagc	ggacagcgag	gttgattcag	gctatcgatt	tactgaatgt	cgaggaaaaa	420
gccttgatta	cacttttcta	ttatgaagaa	aagtcgatag	aagagatagg	agaggtgctg	480
aaactttcgc	cgggaaatgt	gaaggtaaag	ttgcacgtga	cccgcacaaa	gatttatgta	540
ttgatgaacg	gaaaggagtg	a				561

<210> 2205
 <211> 441
 <212> DNA
 <213> B.fragilis

<400> 2205
 aaacatacga tcatgatgga ttttattaca gcccctttta ttgtaggcat cattacttta 60
 ggtattttaca aattgttcga actcttttgcg tgcagacgcg aacgcatcac gottatttgaa 120
 aagtttaggag agaaaatgtc tcaaaccgat cttgagctaa acggaaaaat ctgtctgccc 180
 gactttaatc gtccccaact atcattcggga gccctgaaag gcggttgctt attgctggga 240
 gtaggcttag ggctactggt cggattttatc ttgagctatg tcagtttttc tccctacgat 300
 ctcgacagac tgcagagagg gtataccgcg gagatgggtg gggtcaccta cggttcgtgt 360
 acccttcttt tcggaggagc aggattagtg gcctctttcc tgatagaaca gaactttgca 420
 gcgaaaaaga aagagaaata a 441

<210> 2206
 <211> 1806
 <212> DNA
 <213> B.fragilis

<400> 2206
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 agaagaatth atgcagtgc acggcgacagc ctgaacgaag taaacgaggc cgtgaggcaa 180
 aatgaggtaa tgaagtggat tcatgtccgc cacgaagaaa ccggtgctga tgccgcaggc 240
 gcagaagcgc aactgaccgg actaccggga tgttgtgcgg gtagcagtggt tccggggcat 300
 gtccacttaa ttaacggact ttacgatgcg catcgctcgg gagcacctgt gatagccatc 360
 gcttccacta ttccgacagg agagtccgga accgaatatt tccaggaaac caataccgtc 420
 aagctattca acgattgtag cttttacaat gaagtggcta ctactccga gcagtttccc 480
 cgtatgctgc aatcggccct ccagacggca accacccgga aaggagtagc cgtagtcgga 540
 cttccgggcg acctggcaaa gaaaccggca gtcaaggtag agtcctcgga acagatttat 600
 ccgcttgctt cgtctgtctg tccggcgaaa gaagacctga tacggctggc agggatgctc 660
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<210> 2207
 <211> 270
 <212> DNA
 <213> B.fragilis

<400> 2207

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tacgaactgg	ctgctttgga	tgtggaaaat	gcaggacttt	tctactggag	gaatacgttt	180
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gccattgacg	taagtcagat	taatccttaa				270

<210> 2208

<211> 273

<212> DNA

<213> B.fragilis

<400> 2208

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tggtatgaat	tggaaggtag	tcttcctgcc	gggagggtgcg	gcagaatgaa	tggcatcctg	180
gtgggagata	aggtgtatct	ctgggggtgt	tatcatacag	cacctatgtg	gacagcagcg	240
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<210> 2209

<211> 213

<212> DNA

<213> B.fragilis

<400> 2209

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accagttcgc	gctttccgcc	gatgtggctc	gggtcgcgca	agataggcag	ttcgggtatg	180
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<210> 2210

<211> 1296

<212> DNA

<213> B.fragilis

<400> 2210

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cctgccaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
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<210> 2211
 <211> 789
 <212> DNA
 <213> B.fragilis

<400> 2211
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 gaactgggtga tcaatgctgc cacggtgaaa tacacgctgg acgctttccg caaaattctg 240
 ccggtttttg ccaaagactg tatcctgagt gatatcgctt cggtaaaaac cggattgaag 300
 aagttctacg aagaaaagcgg attccggtat gtctccactc acccgatgtt tggccctact 360
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 attaaatga 789

<210> 2212
 <211> 1191
 <212> DNA
 <213> B.fragilis

<400> 2212
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<210> 2213
 <211> 252
 <212> DNA
 <213> B.fragilis

<400> 2213
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 ctgagaaact cacacctttt ggaggaattt tttcaatcat ggagaaattt gactccatgc 180
 tttcaccctg tatcgactca acactgggtc agagatgcag cagtatcttc ggatatcagt 240
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<210> 2214
 <211> 921
 <212> DNA
 <213> B.fragilis

<400> 2214
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 gctgaatcag gaatggcagg tgtatttggt tgtggaacca caggagaatc tcattcactg 180
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 aagggtgattg cgcattgtgg tagtaactgc caattggaag ctatggagct ggctcggcac 300
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<210> 2215
 <211> 498
 <212> DNA
 <213> B.fragilis

<400> 2215
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 aaaagtctgg aacgtaatgt accggggcaa gggaaagtaa ctattcatca ggattccgcg 180
 atcgaagctt tgctgggaac tgcccgcacc ggcacaggag agcagactgt tataaagtcg 240
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 aatcctcccc ggtggtttgt tagagtcggt gattttcgca gcacgaaga agctgatgcc 420
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<210> 2216
 <211> 3309
 <212> DNA
 <213> B.fragilis

<400> 2216
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<210> 2217

<211> 2052

<212> DNA

<213> B.fragilis

<400> 2217

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<211> 1605

<212> DNA

<213> B.fragilis

<400> 2218

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1605

<210> 2219

<211> 1068

<212> DNA

<213> B.fragilis

<400> 2219

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<210> 2220

<211> 903

<212> DNA

<213> B.fragilis

<400> 2220

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<210> 2221

<211> 1566

<212> DNA

<213> B.fragilis

<400> 2221

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<210> 2222

<211> 192

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (169)

<223> Identity of nucleotide sequences at the above locations are unknown.

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ccaaaaatac	aaattaaatc	tgagaaactc	acaacctttt	ggagaattnt	tttcattcat	180
ggaagaaatt	ga					192

<210> 2223

<211> 942

<212> DNA

<213> B.fragilis

<400> 2223

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<210> 2224

<211> 300

<212> DNA

<213> B.fragilis

<400> 2224

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<210> 2225

<211> 588

<212> DNA

<213> B.fragilis

<400> 2225

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<210> 2226

<211> 3387

<212> DNA

<213> B.fragilis

<400> 2226

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<210> 2227

<211> 1482

<212> DNA

<213> B.fragilis

<400> 2227

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<210> 2228
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 <212> DNA
 <213> B.fragilis

<400> 2228						
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<210> 2229
 <211> 861
 <212> DNA
 <213> B.fragilis

<400> 2229						
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gatcagggtc	aagataacct	acttacttat	tttagaacca	aagatctgcg	ggcaggagat	240
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<210> 2230
 <211> 1629
 <212> DNA
 <213> B.fragilis

<400> 2230						
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<210> 2231

<211> 402

<212> DNA

<213> B.fragilis

<400> 2231

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<210> 2232

<211> 606

<212> DNA

<213> B.fragilis

<400> 2232

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<210> 2233
 <211> 552
 <212> DNA
 <213> B.fragilis

<400> 2233
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 ttctggctgc ccaatgacct gaaacgtttc aaagcgttga ccacaggaaa cacaatcatc 180
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 gtccttttctt ccaatccggc agccgaatgt ccgggagcag aagtattcac ttcgctggaa 300
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 ccggaagccg atgccttctt cccggtgtga gacacaacta tatggcacga aaaaagcaga 480
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<210> 2234
 <211> 1218
 <212> DNA
 <213> B.fragilis

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 tattttctgtg gcggctcatg cgtggaagat gtaacgtcac aactgatgcg ccatctctcg 240
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 gacaaactca acacattgct tataaacgct ttggtttcta caggcgagtt gaaggaaatt 420
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 <211> 876
 <212> DNA
 <213> B.fragilis

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 gccaaagagg tcaccaaaag atttgagaat acttatctcc tccctatcc cataaagccg 420
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gggtatacca	caagtgaat	ggaaactttc	tataaagatg	ccgccatcgc	atgcgaagcc	660
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agtctttcgg	cagacagtgg	ggtcagcgct	cccaaacagg	gagcatggaa	gcactcggcc	780
ttcgggttcc	cacttcgata	ctttctattc	cgaccgctat	ctgactacca	gccgggtaaa	840
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<210> 2236

<211> 267

<212> DNA

<213> B.fragilis

<400> 2236

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cgggaagaga	aagcacgctg	taattgcggg	catagtaatt	attgcattgg	gaggatgtac	180
acgatcgaaa	tggcttgcca	tcggcatctg	acagaagaac	ttcctctttg	cctgaaaaaa	240
gaaatagaac	agttggagaa	taaatga				267

<210> 2237

<211> 399

<212> DNA

<213> B.fragilis

<400> 2237

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tgcaattgga	aggctactcc	gatctgcatg	ccaaaatcat	acagattttc	ggcatcctca	180
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atatccattt	gctgcccctc	acaaatttca	agtgtgtgta	ggctgaacaa	atccatcact	360
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<210> 2238

<211> 816

<212> DNA

<213> B.fragilis

<400> 2238

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<210> 2239

<211> 573

<212> DNA

<213> B.fragilis

<400> 2239

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<210> 2240

<211> 252

<212> DNA

<213> B.fragilis

<400> 2240

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<210> 2241

<211> 1581

<212> DNA

<213> B.fragilis

<400> 2241

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 <211> 846
 <212> DNA
 <213> B.fragilis

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<210> 2243
 <211> 468
 <212> DNA
 <213> B.fragilis

<400> 2243
 ttaatgggaa aatttaataa aacaggtaag cgcgggatgc ctacgctgaa tacttcttca 60
 ctgcctgact tgatctttac attggtgttc ttctttatga ttgtaacaac aatgcgtgaa 120
 gtttcattga aggttgagtt taagattccg caaggtagct agttggaaaa gcttgaaaag 180
 aaatctttgg ttacgtttat ctacgtaggt aaaccgacag cagaatttcg taaaaaactg 240
 gggctctgaaa gccgtatcca gttgaatgat gcttatgctg aagttgacga gattcaggct 300
 tacgtgacta acgagcgctc aagtatgaaa gaggaagacc aaccctttat gactgtgtct 360
 ttgaaaattg accaggatac taagatgggt atcgttaccg atattaaaca ggctcttcgt 420
 caagcttatg cactgaaaat taactattct gcgagagctc gcgaataa 468

<210> 2244
 <211> 720
 <212> DNA
 <213> B.fragilis

<400> 2244
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 tttataattcg ttgcgttcga atggacggag cgtgatataa agatcgatac aagccaggcg 180
 gtagcccaga ttgagtttga agaggaaatg attcctatta cacaacagga agaaaaaccg 240
 gccccacctc ctgctcgaggt tcccaaacag gctgaaatcc tgaagattgt tgatgacgag 300
 gctgatgtac aagaaacagc cattgcttca acagaggata ccggacagaa agtggaaagta 360
 aaatatgtac cggttgaggt aaaagaagaa gaaccctcgg aacaagagat ttttgaagta 420
 gtagaaaatg cacctgaatt cccgggtggt atgcctgctt gtctccagtt cctgtacaag 480
 aatatcaaat atccgccgat cgctcaggaa aacggtagct agggacaggt tgtcctccag 540
 ttctgtgttg aacgtgacgg tagcataggt gatattaaag ttgtaaagag cgttgacccc 600
 taccttgata aagaagctct tcgtgtggtt aagaccatgc ctaagtggaa gccgggtatg 660
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<210> 2245
 <211> 873
 <212> DNA

<213> B.fragilis

<400> 2245

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gctgaaacca	aatgccggga	gttgggtgaaa	gaaacgggaa	atgaaaagat	agaggtatgg	180
cagatcgacc	ttgcttcact	gtcttcggtg	agggcttttg	ccgaccggat	gttacggcaa	240
aagactcctg	tcgctttgtt	gatgaataac	gccgggacca	tggaaaccgg	attgcacatt	300
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cggctttttgc	ttcccttgat	gggagaggga	accgcgattg	tcaatatggg	gtcttgtacc	420
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gtggaggggac	ggacggcaac	gtttaatttg	aataatcatt	gtcgtcttct	accggaaaaa	780
tatacccgtc	ctgaccgaag	ggcacagcta	tgggaagaga	cggaacggat	tttgtcggaa	840
aagggtctct	tgccgataaa	tgataaacgg	tga			873

<210> 2246

<211> 210

<212> DNA

<213> B.fragilis

<400> 2246

ctgaaaacgc	ttgtgggttcg	catttttttt	gtaatttgca	cccgatttga	agaaagcgcc	60
aattggagag	atgctcgagt	gggtgaagag	gcacgcctgg	aaagcgtgta	tacgccaaaa	120
gtgtatcgcg	ggttcgaatc	ccgctctctc	cgcaggaagt	ataaacaaga	gacgataagt	180
aaatacaata	ataataattt	aattaattaa				210

<210> 2247

<211> 477

<212> DNA

<213> B.fragilis

<400> 2247

tctgagatga	gtaagttaac	atataaagta	tcgtattacg	tactgtacgc	gatgtttgct	60
cttatcgtga	tcgtattggg	tttgttctac	ttcgggtggac	aaatggaaac	tccaattgta	120
tacgacatgg	ataatcccgc	aaacacagat	gccttgctgt	acttgatgta	tggctctgtt	180
ggcattgctg	tagttgcaac	tgtggttgct	gctatcttcc	agttcggttc	tgctttgaaa	240
gataatccta	aagggtgctat	cagatcattg	ctcggactta	ttcttctggt	tcttgtattg	300
gtcgtagcat	ggtctatggg	tagtggtgaa	acactgacca	ttcaaggata	tgagggaact	360
gataatgttc	ctttctggtt	aaaactgact	gatatgttcc	tttatagtat	ctacttctta	420
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<210> 2248

<211> 735

<212> DNA

<213> B.fragilis

<400> 2248

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cctgtttcac	tcaagacatt	gggagaagcc	cgtatatttc	tgtctaaatt	tgaaacggcg	180
cattcttatt	atgtacactg	ttacggagag	caaagcagga	acagtaagaa	acaccaggcg	240
aatgtaaaaa	cggcccggtc	ttatatctct	cacttcatac	aagtcttgaa	tttggctgtg	300
attcgtatgg	aaatcaaaga	atctcataag	gctttgtatg	gcttgcccgt	agataatttc	360
agtgtacccg	atttaagtag	tgaagcgtct	ctggccgagt	ggggacaaaa	aattatagaa	420
ggggagcgga	aacgcacctc	tcaaggcggt	attccgattt	ataacccac	gattgctaaa	480

gtgaaagtgc	attatgatat	attcatggaa	ggatatgaaa	aacagaaaag	ccttcagtct	540
ctcaccaatc	gtagtttaga	gcaacttgca	tccatgcgtg	tgcaagccga	ccggttgatt	600
ctggatatct	ggaatcaggt	ggaagccaaa	ttccaggatg	tatcgcccaa	tgagaaacgc	660
ttggaaaaat	gtcgtgatta	tggtctgatt	tattattatc	ggaccggaga	aaaacagaat	720
aaggagattc	tttaa					735

<210> 2249

<211> 1044

<212> DNA

<213> B.fragilis

<400> 2249

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atccggttta	cacgtactcc	ggcaggtttg	tatgacccta	ttaaatatgt	tctttccatg	180
ggaggaaaac	gtattcggcc	ggttcttatg	ctaattggcat	acaacctcta	caaggaggat	240
gtgtcctcta	tttatgaccc	tgtacaggct	attgaagttt	atcataacta	tactcttttg	300
catgacgatt	tgatggatcg	ggctgatatg	cgccgcggca	agacaactgt	ccataaagta	360
tggaatgaca	atactgcgat	tttgtcagga	gacgctatgc	tggtgctggc	ctatcagtat	420
atggctgcc	gttcatcgga	acacctcaaa	gaagtgatgg	atttgttcag	cctgacagca	480
cttgaaattt	gtgaggggca	gcaaatggat	atgaattttg	agtcocgtga	ggatgtaaag	540
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attggcatca	aggctgtttg	cgaaaacaag	atgcgtgagt	attacactcg	tgcgatgaca	960
agcctgggcg	ccgtgtctgt	cattgaggat	aagaagagtg	agctgaaaaa	gttgatgaag	1020
catttaaatgt	accgcgagat	gtaa				1044

<210> 2250

<211> 1374

<212> DNA

<213> B.fragilis

<400> 2250

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aaacgggggc	ttcgcaatga	agacgggtaca	ggtgtattgg	tcggattgac	taagattggg	180
aatgtcgtag	gatacgaacg	aatccccgga	ggtgggtctga	agccgatccc	gggaaagtta	240
ttttaccgtg	gatatgacct	agaagattta	gcccacgcca	ttttaaaaga	aaaacgtttc	300
ggatttgaag	aggtggccta	cctgctgtta	tccggcagtt	tgcccgataa	ggaagaactg	360
gcttcgtttc	gcgagctgat	caatgataat	atgcctttgg	agcagaagac	caagatgaat	420
atcatcgaac	ttgaaggaaa	caatattatg	aatattctgg	cgccgcagcgt	actcgagatg	480
tatcgtttcg	atcctaatac	ggatgatact	tcacgtgaca	acctgatgcg	tcagagcatc	540
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accttcgggg	gttcgtttaca	cattcgtcat	ccgcaggaga	atctgtcgat	tgccgaaaac	660
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attcaggact	ggaccaatgt	agacgaaate	gatacttact	ttaccctgat	ggtgaataag	960
gaggtttaca	ataagaccgg	attgatatat	ggcatcgggc	atgccgtata	taccatttcc	1020
gatccgcgag	ctgtgtttgct	gaaggaaactt	gcacgtgact	tggcacacga	gaaaggctcg	1080
gaacggggagt	ttgctttttct	tgaactttttg	gaagaacgtg	ctatcgctac	tttcggtaag	1140
attaagaata	atgggaaaaac	agtatccagc	aacgttgatt	tttattccgg	ttttgtttat	1200
gagatgattg	gcctgccgca	ggaaatctat	accccttctg	ttgccatggc	gcgtatcgtg	1260
ggttggtgtg	cccatcgcaa	cgaagagttg	aattttgaag	gtaaacgtat	cattcgtccg	1320

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1374

<210> 2251
<211> 483
<212> DNA
<213> B.fragilis

<400> 2251
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gacaacgccc gcattccgtt cctggaagtg gcaagagcgt gcaatgtttc ggggtcggct 120
attcatcaac gcatacagaa gttgactaat ctgggtatat tgaaagggtc ggagtatgtc 180
atcgacccgg agaagatcgg gtacgagaca tgtgcttata ttgggattta tctgaaagat 240
cctgagtcgt tcgattctgt aaccaaggct ttggaagcaa taccggaagt ggtggaatgt 300
catttcacta ccgggaaata tgatatgttt atcaagatat acgcaaggaa caatcaccat 360
cttttgagtg tgattcatga taaactccag ccgttgggat tggctcgac cgagacgctg 420
atttcattcc atgaagccat caagcggcag atgccgatta tggtagatac ggacgaggat 480
taa 483

<210> 2252
<211> 954
<212> DNA
<213> B.fragilis

<400> 2252
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aatcatacat ttgtaatcat tatggtaaaa gtagaaatag atgaagggtc cggtttttgc 120
tttgagagtgg tcacagctat ccacaaagcc gaagaggaac tcgcaaaagg ggtaacactc 180
tattgcctgg gagacattgt acacaacagc cgtgaagtgg aacgcctgaa agagatgggg 240
ctgattacca tcaatcatga agagttcaaa caactccata acgccaagt gcttttgcgt 300
gcccatggcg aaccacccga aacctatata attgccaaag aaaataatat cgaaatcatc 360
gatgccacgt gtccgggtgg actccgcctg caaaaacgaa tcaacaaga gtatatgcag 420
gaggacctcg acgaaaaaca aatcgtaatt tacggaaaga acggacatgc ggaagtctta 480
gggtctggtag ggcagacaac cggcaaagct attgtgatag aaaagctcga cgaggctcgc 540
cggctggatt tcagcaaaag catacgctg tactcgaga caaccaaata actggatgaa 600
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tcacacgatt tgatcttctt cgtcagtgg aaaaaaagtt caaatggcaa aatgttattc 780
gaagaatgca aaaaagtcaa cccgaattca catttgatag acagtgccga cgaaattgac 840
gactctttac taccgggtgt caattctatc ggtgtatgog gggctacatc gactcctaaa 900
tggctgatgg aagaaatctc tgaagctata aaggcacaga ttaaaagaca atga 954

<210> 2253
<211> 837
<212> DNA
<213> B.fragilis

<400> 2253
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aacgcagata ttttaaaaat acagtatatt tggcgaaaaa atttagataa tacgttaaaa 120
aaggagataa acctgctgca taacataatg aaaaagataa caattgcaat tgatggcttt 180
tctcgtgctg ggaaaagcac catggctaaa gatthagcca aagaaatagg atacatctac 240
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cacggtgata caatcgatac ggatgaatta aaacgacgta tcggcgacat ccacatctct 360
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gatggctcgt acatcgggac gaccgtattc ccggatgcag aattaaaaat attcgttaacc 600
gcctccgccc aaattcgtgc ccaacgccgc tatgacgaac tgaaagccaa gggtcaggaa 660
accggcttcg aagagatact ggaaaatgtg aagcaacgtg accacatcga tcagacacgt 720

gaagtcagcc	cattgaagaa	agccgacgat	gctttgctat	tagacaacag	ccatctcacc	780
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<210> 2254

<211> 996

<212> DNA

<213> B.fragilis

<400> 2254

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gcaccgggaa	tgaacgctgc	tattcgtgca	gtaacgcgtg	cagcaatcta	caacggactg	120
caagtaaaag	gtatatatag	aggatacaga	ggcttgggtg	caggagagat	caaggagttt	180
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cccgaattca	gtacagaagt	cgaccaattg	gaagaattta	taaagagcgg	tttccgtaaa	660
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gacgagattg	tatacgttcc	gttcagtaaa	gccatcaaga	atgataaacc	tgtcaagaga	960
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<210> 2255

<211> 780

<212> DNA

<213> B.fragilis

<400> 2255

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agtacgacga	ttgaacccat	gctgtcgggt	tgtgatacct	atcgggactt	ttgctttccg	180
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tactgggata	aaacctggct	gaaagaacag	ttgattgctt	ttgaaaaaca	agtgcattgg	360
gcccttcatt	atcaattgcc	catagtgatt	cattgccgcg	aagctttcga	ttatatatat	420
aaggatttgc	aaccttataa	aaatagtggg	ctgaccggaa	tctttcatag	ttttacggga	480
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atcgtattgg	aaaccgattc	gccttacctc	actccgggtt	ctaatacgtg	aaagagaaat	660
gagagtgcga	atgtgaaaga	tacattaata	aaagttgccg	aaatatataa	cgaagatccg	720
gaaaaagttg	cgggaattgac	cgtctgttag	gcattaaaag	tgtttggaa	gctcaaataa	780

<210> 2256

<211> 186

<212> DNA

<213> B.fragilis

<400> 2256

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tttactgttc	ttggtgcgat	tggaattacg	aggggaggat	tattgccagg	tggtggattg	180
aaatga						186

<210> 2257

<211> 642
 <212> DNA
 <213> B.fragilis

<400> 2257
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 gaccgctatc tgactaccag ccgggtaaaa gcaataaacg acgcattggc aggcattccct 180
 tatgaacata tcattatctt agccaatacg gaacaatacg gtggggggcg catctacaat 240
 gctttcacac tgaccaccgc acaccatccc aattttccgtc cggtagtggt acatgagttc 300
 ggtcatagtt ttggtggcct ggccgacgaa tatttttatg atgaagacgt catgaacgga 360
 ctctatcctc tcaacattga accatgggag cagaacatta ccaccgcgt caactttgcc 420
 tctaaatggg aagatatgct caccaaagct actcctgttc cgactcgggt agcaaataag 480
 gccaaatatc ccataggcgt atacgaagga ggaggctact cagccaaagg tatttatcgc 540
 ccggcattcg actgccgcat gcgtaccaac gaatatccta ccttctgtcc ggtttgccaa 600
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<210> 2258
 <211> 1053
 <212> DNA
 <213> B.fragilis

<400> 2258
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 ttgctacttg ccgtactttt tatgtttgga cgagacggtg gggtgatgtg gcgtttccgc 240
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 aataaagaag gcattaatgc cggacgcagt acagctttga ctatctcctg cctgtttctg 420
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 gaatatatgt ttcgtgaata ttatgccgat ttttttgatg tggcaggat ggctttggtc 960
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 attcccgggt ggggtgaagaa gttgagagat taa 1053

<210> 2259
 <211> 459
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (374), (432)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2259
 agaaaagaat cgtacctttg cgaccgttca atcttttttaa gtatagagtt tatgaagaga 60
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 ccaattttca tgggttacta ccatacctta tataataagg tgcattggac tgattatttc 180
 tctgtaatgg gacacgggct tccgttagat ttttcacttg ccggatatct gactgccatt 240
 cccggactat tgctgatcgc atcgggtctgg atacagccgg cggttattcg ccagatacgc 300
 cggggatatt tcatgataat cgccattctg ctttctctga tctttatcgg tgacctggac 360

tgtatgaata	ctgnnggattc	cgcttggatg	ccactccgct	gttctacctc	ttctcctcgc	420
ccaaagatgc	tntggccagt	gtcagcattt	gggtcgtga			459

<210> 2260

<211> 189

<212> DNA

<213> B.fragilis

<400> 2260

gcaagacgat	ccccgtacaa	caggcaagag	tctgtatata	tctgcatggt	tgacgtcctc	60
tacatcggac	aagaaacaat	ggcgggggat	caacaaactc	taaaaccgga	cactactctt	120
gtccgatctt	gtacagattg	ttcatttccg	aacagttctt	tctcgaatca	ttacactaat	180
ttacaatga						189

<210> 2261

<211> 2118

<212> DNA

<213> B.fragilis

<400> 2261

caatcaatcc	cgactgggac	ggtatacatg	acgatgatga	aacaatcata	ccttaactcc	60
ggttatttaa	cacaactaat	tatgaaaaag	agaatacaaa	tcttgataat	tgtcatatta	120
tatgctttga	tgtttgtccc	tctttccgcc	caaactccac	ataccatcag	cggtatcggt	180
aaagacaggg	catcagttcc	catttcggga	gtcaatatcc	gagtagaagg	gcagaaatgg	240
aaagcctcca	ccggaagaag	aggtaagttt	acattggaaa	ttcctcaaaa	ctccaccatc	300
accttttcct	ctggttggtt	tgagccgggc	accatccatt	ccggtgagaa	gaaatggata	360
gaaatcactc	tcaaagaatc	tcaaagcctg	ttgcccgaag	taacagttac	ttccacatta	420
aaaaacagca	tgaaatttgt	tttcgctccg	tccgacctgg	agctgatcaa	agacatgctc	480
taccttaaaa	cgagatatata	aatccccctc	aaacgctttc	aaagtgatcc	ccgggtcatc	540
attcaaccca	ttctgtcaaa	caatagccgg	ggaactcaaa	aaaactttct	tcccattgtg	600
tacgatggca	agaattatga	tattttactc	cggcgaggaa	acgtctgcgg	cgaccgggct	660
gaaaaagaat	attattcacg	ctttgcacag	gtcatagacc	ctgactccat	ttgtaaccag	720
acgttgactt	atgcccgaac	gtgtacgggt	gacgacatca	acgacctata	tacaaccgaa	780
gtacgcatca	aaataagcac	tttctgccag	gatgaatatc	gggatacgat	tgcgcatcac	840
aacggcatta	tctacccgat	gcggttcttt	aactataatc	tgagtgcaat	ggacttggac	900
aacagctaca	tccccaaagc	gactccgctc	aacttcaatg	aaaaaggaga	aatgcatctt	960
cgttttccgc	ctgaagacgc	gaactctctc	gaaaatgaag	gaaaaaacgc	cgaagaactc	1020
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tttcagatca	taggatacac	ttcgcgggaa	ggaacatatg	aatataacct	aaagctggcc	1140
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cgaaaagcca	aagtagataa	cgatgccgta	gtagagtcac	ggacaacggt	ttgtgaactc	1260
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ggaaaccata	atgaaatata	ctggggagcc	agacgaatga	agatttacc	gctcatccgg	1380
gaccgttatc	tgccccgact	ccgaagagta	gaatatttct	atgaatattc	cgaactacgt	1440
acgtcaata	aagacgaaat	cgacgctctt	tataaaaaag	atccccaaaa	actgacagcc	1500
agcgagtttt	ggagttatat	catgagtcag	aaagatgcta	cggacgaaaa	acgggaagca	1560
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gtcctgaaaa	aggtagaaga	cacctctccg	gacaccgaat	atgtgaaagc	gattgcccga	1980
aacaggctga	ataacgtcaa	tgaagccgtc	attcacctac	gaaatgccat	cactcaaaaa	2040
ccatcttttaa	aggaaatagc	acaaaaagat	ggagatgtgt	tagatttact	ggatttatta	2100
gatttagata	agaaataa					2118

<210> 2262

<211> 1137

<212> DNA

<213> B.fragilis

<400> 2262

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tgcgagccac	tcaatgaaac	tcccagagacg	cccgttttca	gtctcaacct	gacatctcct	120
gacggagagc	cctccaccga	taacgacaat	gcggtattgc	aaaaactggg	ataccatctt	180
tttatttttc	gttccaatac	tgccaatcct	tcccccgata	atgacggctc	caattacact	240
ttttggaggc	ataccggaga	tctcacccta	aagcaaacc	gggaatacac	tttatccatc	300
cccagtgaat	ctacagatcg	gtcttatctg	ctgctagttc	acgccacccc	taaagaaaag	360
ccggaatctg	agatcataag	caaagaagga	atgactttca	gtgagtcaga	aatcagcatg	420
ataaaagaaa	acgataacaa	ctatgtccc	ctttcaaaag	ataactatta	cgccattcaa	480
caactcactc	ccgaggatat	agcgcaagg	aaaacgtcta	togaattcaa	attaaagcgg	540
gctgtgggag	aattgggtatt	tgacgtaatg	aaatgcgatg	aaaaaagcca	caacccgatt	600
gacattgaca	cagaatgttc	ttcaacttta	gacagagtgt	ttcggatcga	tatagaaatc	660
aatggcgtga	tccccaaagt	ttcattaacc	aacgaaacca	agaatcccga	acggatcaac	720
atctgttttt	ctaaagaaat	agttctcaaa	agcgactata	cccctgattt	tgcaaacac	780
acagaagtca	tagagccact	tactaatgct	ccattagata	cgaatgaaaa	agccgtaaaa	840
ggtgcgacac	gcctctgcgg	cccctatctc	ttctctaaaa	tgacattaga	tcacccggac	900
gaagaagcaa	cggatccgga	agaaggtatc	aagaccatac	tcaacttttc	gtactacgat	960
accactcctc	ttccgaacgg	gagctatagc	acgaaaaaac	ttattctttc	tcttaccgac	1020
aagccattga	cgattgtaaa	agaccattat	acagtgaaca	atatacgttt	gcggaacaac	1080
cgtatcatag	atctttccgt	ttcgggtgac	ttcgggaatg	attggaaatg	ggattga	1137

<210> 2263

<211> 210

<212> DNA

<213> B.fragilis

<400> 2263

attcttgccg	ctatctttgt	catacccaaa	ttaaaagagt	atccccctat	gagtagagaa	60
gaattacagc	aaaaaagtcg	tttcgccatg	ataggaacat	tgatgaccat	tgtcagtctg	120
gtgtttttgt	tttatgtagg	cagttcggtg	gtcaatacta	ctaagaaata	taaagagctg	180
gccattgaga	tagcttgtat	aaacaagtag				210

<210> 2264

<211> 405

<212> DNA

<213> B.fragilis

<400> 2264

aagggggaag	ctgacagctt	ctcccttttt	tcgtaacttat	tcttttcatc	ggcccggaaa	60
gccggtgtac	gtggggaaaa	gtcagggttg	gggcggatga	aagtctggct	ttccaaccca	120
aacagaaggt	tgcttcgacc	cggacagacg	ccatcttcgg	ataaagatga	agctttgttc	180
tgctatatta	caatatatgt	tacgggaata	tctcctattg	taattggcag	ctcctctatt	240
cggttaataa	aacataaaaa	tgctattgac	aaaattcagc	tgggggtttc	gtttttgcta	300
tacgaactga	cggatcaggg	caacaaaatc	ttttccgtac	tttttctttt	tatattcacc	360
aatcccgttg	atgttaccga	aggcttcgac	tgtcgtggga	cgtga		405

<210> 2265

<211> 522

<212> DNA

<213> B.fragilis

<400> 2265

aactattttc	tggtttttatc	gactaatgga	ttaaaagaga	caaaaaacat	ggaaatagaa	60
aaagatttta	tagacctact	gactgaacac	aaagcgctga	tatatataag	ctgttttatg	120
tatgcctcca	atcaggaaga	tttgaacgat	ctttatcagg	aagtagtagt	caacttatgg	180
tgttctttatc	ctaaattcag	gtatgaaagt	aaattgtcta	cctggatata	tcgcgtagct	240

ttaaataactt	gtatctcggg	tttacggaaa	aagaaaatac	tggattatgt	accattgagc	300
gtggatatcg	gagtgatatga	tgactgtttg	cgcaatgatt	ctttaaaaga	gatgtatcag	360
ttgatatgtc	aactcgaccg	atatgaacgg	atgcttgtcc	tgctatggct	ggatgaaaat	420
agttatgacg	aaatagcatc	cattaccgga	agtaaccgaa	atacagtagc	tgtcaagttg	480
catcggatca	aagataaatt	aaaaaagatg	tcgaaccaat	ag		522

<210> 2266

<211> 1698

<212> DNA

<213> B.fragilis

<400> 2266

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cgctggcact	tgctctcct	ccttctcggt	ttctgctgtt	ctttcttcat	taacaatgga	120
gctatctttg	cagatatcat	ggagtcgaga	aatatcatca	ctgcacgtga	gatggtatac	180
gatcataatt	ggctggtgcc	aaccatgaac	ggagaattaa	gattggaaaa	gcctcctctc	240
cccacctgga	ttgctgccat	aaccgaaatg	atthcgccag	acaacctccc	tttacaacgc	300
gccatggccg	gatttgccgc	tgctcatgta	gtactctttt	tttataaatt	cgccaccaag	360
ctaaccgaca	accgaacctt	tgccctggta	tcttcgctcg	tcttatgtac	ttcgtataac	420
attattctga	tgggacgtac	ggctacctgg	gatatctatt	gccatgctgt	catgatagga	480
gccatttatt	atctttatct	tgctttaagg	cagaatacat	gcaagtggac	ttattttatc	540
ggtgcaggtt	tttttatggg	attatctttt	ctcggcaagg	gtcccgtatc	tttctatgcc	600
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gtagaatcat	ccaaagaata	tttggtctgt	ctgagctgga	tgttactgat	ccttttcttt	960
ctgtccctgc	ttccggaaaa	gaaaacacgc	tatctactcc	cgatattgtt	gcccgcagcc	1020
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cttaaggata	gggtactcta	cgcctcaat	gcttacttga	ttgtagtagc	cgcattggcc	1140
ctacctatag	cgctttatct	attcatgtac	cggaaggac	ggatgggaac	gggaatgttc	1200
gtatggttgg	tcgtattgtt	cctgacagta	gcagtatggc	tattccgatc	tgctttcaaa	1260
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gtgatgcctt	atataggaag	ttttgtgagc	aactcggatc	ccaaaagtat	cagtgtctacc	1380
cgagagaatc	cggaactaca	acctttaccg	ttttaccaca	gtaaagacga	agtgttgccg	1440
atcgaaactg	tatacgaaac	acataaaaaa	atcggggaca	tggaattaac	caataaagaa	1500
gagatcataa	aagcgctgcc	gttcgtcctt	atctcacaaa	agccggcgga	actgctgatt	1560
ccggtattcta	tccgaaagga	cctgaacctc	cgttttattg	attgttatga	taacaaccgc	1620
tgggcataaag	gacataaaaag	atatgacagc	gtatttatca	gcaatgtgac	aattgtagaa	1680
ccgataaagg	aacaatag					1698

<210> 2267

<211> 258

<212> DNA

<213> B.fragilis

<400> 2267

cacagtgtta	aagcttgttc	tttggatgtg	aataaaaagt	tctttaaatg	caaaagactt	60
gttattttgcg	cacaagaacc	tgacaatccg	caaaaggcgt	taacaatgtt	aattgaaaaa	120
aggtataagg	atgaagatac	cggttcagac	ggcgtaaac	catttccgaa	acttgagcta	180
tcttattcag	ccggtgtctg	tcttttctta	ttaaagcaag	caaaaaggac	aattatcaac	240
ttgaaaaataa	agaaataa					258

<210> 2268

<211> 1656

<212> DNA

<213> B.fragilis

<400> 2268

ttaaataagta	aaatcgttat	ggcaaaaagaa	atattatttca	atatacgaagc	tcgcgatcaa	60
ttgaaaaaag	gtgttgatgc	tttggctaata	gcagtaaaaag	taacactagg	cccgaagga	120
cgtaatgtga	ttattgaaaa	gaaattcgggt	gtccctcaca	ttactaaaga	tggtgtgact	180
gtagcaaaaag	aaattgaact	gacagatgct	taccagaata	ccggtgcaca	gttggtgaaa	240
gaagtggctt	ctaaaacagg	tgatgatgcc	ggtgacggta	caactactgc	aactgttttg	300
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gagaaagtgg	gtgacaacta	tgacaagatt	gagcaggttg	ctactgtttc	tgctaacaat	480
gatccggtta	tcggtaaaact	gattgccgat	gctatgcgta	aggtttctaa	agacggtgtg	540
attactatcg	aagaagctaa	aggtactgac	actacaatcg	gtgtgggtgga	aggtatgcag	600
ttcgatcgtg	gttatctgtc	agcttacttt	gtgactaaca	cagagaaaat	ggagtgtgag	660
atggagaaaac	cgtatatcct	gattttacgat	aagaaaat	ctaactctgaa	agacttcttg	720
cctatccttg	aaccggccgt	tcagtctggt	cgtcctctgt	tggttattgc	agaagatgta	780
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ttgacagggtg	gtgtagtgat	cagtgaagag	aaaggtctga	aactggaaca	ggctactatc	960
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gctactaaat	cagactacga	tcgtgaaaaa	ttgcaggaac	gtctggctaa	attatcaggt	1140
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cgtgtggacg	atgctcttcg	tgctactctg	gctgctatcg	aagaaggat	tgtagccggt	1260
ggtggtgtag	cttacattcg	tgctattgaa	tcacttgacg	gattgaaggg	tgagaatgat	1320
gacgagacta	ccggtattgc	tatcatcaag	cgtgcgattg	aagaaccgct	tcgccagatt	1380
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gatcctgcta	aagtaacacg	tggtgctttg	gaaaatgccg	cttctatcgc	aggtatgttc	1560
ctgactactg	aatgtgtgat	tgtagaaaag	aaagaagata	aaccgcgaat	gccgatgggc	1620
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<210> 2269

<211> 1017

<212> DNA

<213> B.fragilis

<400> 2269

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agatatatgg	caaaaatcgc	aaagaaactt	accgaactga	taggccatac	tccattgatg	120
gagttgtccg	gttatagtcg	taaatacggc	cttcaagaga	atatagttgc	taaactggag	180
tcgtttaacc	ctgccggaag	cgtaaaggac	cgcggtggcac	tttcgatgat	tgaggatgcc	240
gaagagagag	gagtgtctga	acccggtgcc	actatcatcg	agcctaccag	tggcaatacc	300
ggtgtgggac	tggcgatggt	ggccactatc	aaagggatc	gccttatact	gaccatgcc	360
gaaaccatga	gcctggaacg	ccgtaatctg	ttgaaggcat	taggagccca	gattgttttg	420
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aatgtatata	tagtagctgt	agagcccgc	tcctctccgg	tactcgaagg	cgggaaagca	720
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gcctcgacag	aaggattgtt	ggtgggaatt	tcttccggag	cagctgttta	tgcagcccg	900
caactggccg	gacgtccgga	atttaaagga	aaaatgattg	tgactctgtt	gccggatacc	960
ggcgaacgct	atcttaccac	cgagctattc	gcatttgacg	cttatccgtt	ggactga	1017

<210> 2270

<211> 192

<212> DNA

<213> B.fragilis

<400> 2270
gtacgaaaaa agggagaagc tgtcagcttc cccctttttac tgtatttttaa tctgaatata 60
gtttatgatt acgcagacaa agatacgaca atcaataaca aaagtcaagt tttaggactc 120
ttatttttcc ggattatttg cattgttgca tctgttcgtg aacatcggca ggaggcactc 180
ccagcgaat ag 192

<210> 2271
<211> 546
<212> DNA
<213> B.fragilis

<400> 2271
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ctttcccaag agatagcatt aaaaacaaat gtcctctcct gggcaaccac gaccataaac 120
ctgggagcag aattcaaaat atcaccocga ctgacagccg gggcagatat catgtataaa 180
ggatggagtt ttttatccga taaccgcaaa atgggaggat tcttagttca acccgaagct 240
aagtattggt tttgcatccc tttctataag cactttatgg gccttcatgc ccactatgga 300
caatataacg gtggattcag taaatatcgt tatcaggag acttgtagcg tatcggttta 360
tcttatgggt accaatggat atggaaaaga cgatggaaca ttgaagtatc tgcgggaata 420
ggatatgcat ctatgaacta cgataaatat gaacgtccca aatgcggact attccttggg 480
aaagaccatt ccaactatth tggattaacc aaactcggag tcagcctgat ctatatactc 540
aatag 546

<210> 2272
<211> 813
<212> DNA
<213> B.fragilis

<400> 2272
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atggatttgt attatggcgc ctgggagggt ctggacccca cccgcaatat ggtggacgca 120
tttgaatgta cggatggaaa gccatgggga gaatctcctt tgacggtagc tcctgacgaa 180
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aacagagacc gtctctgta cgagtctgtc aaccattcta tgatggccaa ttttgtcgat 300
gacgggttta aagacgaaga ggttcagggt aacgaatcaa ataataaagg acctaccggt 360
ttcagcgctc tcaaatatgt ccaacctacg gatgtgacac ccggatacag tactgtttcg 420
gatgcagata tcgttgact gcgttacgct catgtattgt tgatgatagc cgaagccgaa 480
aacgaagcac acggagctac cacaacagcc ttgaatgcta ttaatgaagt aaggacacgt 540
tcgggacaac cggccatcga agccgggtatc tcacaagacg atcttcgtga acgtatccgg 600
aacgaatggc gtattgaaac ttgttttgaa gggctgcgtt acttccagtt aaaacgatgg 660
aagttgatgg ataaacgggt gaacggggta gaagatcctg cttatccggg atacatcaag 720
gtgtataaac ctgcatttga atttttcccg attccacagt ccgaaataga taaagcgggc 780
ggtgtattga aacaggaccc ggcgtatgaa tga 813

<210> 2273
<211> 699
<212> DNA
<213> B.fragilis

<400> 2273
ataagaaaga atatggtaat aggatttcaa tggattatth ttattggcat tgctctcggt 60
agctggctgg tgcagatgaa tctgcagaac aagttcaaaa aatactcaa gataccgaca 120
ggaaatggaa tgacaggacg cgacgtagct attaaaatgt tacaagataa cggaatatac 180
acagttcagg tgactcatac tcccggacag ttgaccgatc attataatcc tgccaataag 240
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gctcacgagt gtggacatgc ggtgcagcat gcgagggtt atgcaccctt gacactgcgc 360
agcaagctgg taccggtcgt ttcggttcgt tctcagtggg tgacatgggt gttgcttgct 420
ggtattttgc tgtagagtc tttccctcag ttgttgtttg ccggcattat cttgtttgct 480
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ttgggtatggc	tgagtgtcttc	aggtataacg	aattcatata	atcatagaca	ggcagaagat	600
gcccttcggt	cagccgctta	tacttatgta	gttgctgccc	ttgggttcgtt	ggctacactg	660
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<210> 2274

<211> 2055

<212> DNA

<213> B.fragilis

<400> 2274

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gcagacttac	agatattacg	ctatcgcgta	cccggatttg	agaatttaac	tctcaaacia	180
aaagagctgg	tatactatct	gactcaagct	gcgctcgaag	gaagagatat	cctgttcgat	240
cagaacggaa	aatacaatct	taccatccgg	aggatgcttg	agacgatcta	tacggattat	300
acgggtgaca	gaaacagccc	ggactttgtg	aatctgacca	cctatctgaa	gcgtgtgtgg	360
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gagtttctga	agcaggcatt	gcttagtggt	gacgcttcga	agctcccttt	ggctcaaggg	480
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aatccgagat	acgatgcggt	cattgacgag	cagggaaata	tagtagatgt	acaagtaacc	1980
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<210> 2275

<211> 885

<212> DNA

<213> B.fragilis

<400> 2275

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gacaagatag	tctatatcga	gaacagcgat	ggtaacacga	atgtgcgttt	tcatacaggca	180
gacacccata	agagattctt	cgctcttctg	gaatcccaga	acatccgtgt	aaatcgcttc	240
agggcagact	gcggttcctg	ctcgaaggaa	atcgtcagtg	agatagagaa	gcattgcaaa	300
cattttctaca	tccgtgccaa	ccgatgcagt	tcgctctaca	atgacatctt	tgctctgaga	360
ggatggaaga	cggaggagat	taacggcatc	cagttcgaac	tcaattccat	tctcgttgag	420

aatggaag	gcaagtgcta	tcgtcttgct	atccagagac	aaagacgcaa	cagtggcgac	480
cttgacctgt	gggaaggcga	atacacttac	cgttgtattc	tgaccaacga	ttacaagtca	540
tcgacaaggg	acattgttga	attctacaat	ctgcgtggcg	gcaaggaacg	tatctttgac	600
gacatgaaca	acggattcgg	ttggagcagg	ctccccaagt	cattcatggc	ggagaatact	660
gtctttcttc	tgcttactgc	attgatacac	aatttctaca	agaccatcat	gagcaggctt	720
gacaccaagg	cttttgggct	caagaaaacg	agtcgcataa	aggcttttgt	cttcagattc	780
atctccgtac	ctgccaagtg	gatcatgact	gcaaggcaat	acgtgctgaa	tatctacaca	840
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<210> 2276

<211> 678

<212> DNA

<213> B.fragilis

<400> 2276

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ggaaaatgga	tttgggtacc	gatgtatgcc	agtatcctgt	atgttctgct	aaagaacttc	180
aattggaaaa	taacactatg	ctgcctgact	gccatcgcac	tcaccatcct	ctttgccgat	240
caagtttgtg	ccagcctgat	acgccctgcc	gtagaacgcc	tgcgaccgtc	caatccggca	300
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ccatccctgcc	atgcctccaa	ttctttcgga	ctggcattct	ttctgggtctt	cctgttcgcg	420
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gcagcattca	tgtgttattt	actgaagaaa	acagcaagag	gcgcttcttt	tggaaaagtg	600
aaacatacgg	aatcacgat	ctacgtaggg	ctacttacia	caataggaat	tgtggtttac	660
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<210> 2277

<211> 696

<212> DNA

<213> B.fragilis

<400> 2277

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catgcacagg	agaagctgac	ccgctatcag	gtgaggaacg	ccattacggg	gcgtactccg	180
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acaccggtag	tactcgacct	tgccaatgca	ccgactcaaa	tgacagctgc	cgatacagcc	300
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cttttcattha	atgggtgaatc	gaagatggta	aaggatgctt	cggaagacag	catctctaaa	480
gcagcaacca	aagaggtcgc	tttacgcctc	gaaccgaaa	tggattatga	aatagccatc	540
aaactgcttt	cgactccgga	cgacaaaacc	gtaccttcac	tgaaatgcga	actggtaaaa	600
gatgacaaat	tcaaagaagt	ggcatgcagc	accgatcctg	aacagaaaca	tcgtttctca	660
ctcgataaca	ccaattttacg	ggaaacgggg	ccataa			696

<210> 2278

<211> 501

<212> DNA

<213> B.fragilis

<400> 2278

aacggcgccg	atatggaaac	tcaaaatgtg	aaagatacgg	tacggcagat	attcacagaa	60
tatctaaatg	cgaacggaca	tcgcaagact	cctgaacggt	atgcgatact	ggacaccata	120
tactccattg	acgggcattt	cgatatcgat	atgctgtatt	cacagatgat	gaatcaggag	180
aatttcaggg	tgagcagagc	tacgctttat	aacaccatca	tcttacttat	caatgcccg	240
ctgggttatca	aacatcagtt	cggtacttcc	tcccaatacg	aaaaatcata	taatcgcgag	300
acgcatcatc	accagatatg	tacacaatgc	ggcaagggtca	ccgagtttca	gaacgagggt	360

ttgcagaacg	cgattgaaaa	caccaaatta	agtaaattcc	aacttttcgca	ttactcctta	420
tatatatatg	gtatatgtag	taaatgcgac	agggcacaata	agagaaaaag	agtaaataac	480
aacaataaaa	aagaaaaaatg	a				501

<210> 2279

<211> 1827

<212> DNA

<213> B.fragilis

<400> 2279

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cgtgccaacg	gaataccggc	aggtgcaacta	aacagcagca	atgacgaaac	cgaaaatgcc	300
aacttacgca	gagcctgcat	ctcaggacaa	cttaagctcc	tctacatctc	gcccagaaaa	360
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gccttcggta	acatcaacgg	gattgggtgaa	tataaaaaga	aaaagtacgg	aaaagatttt	1800
gttgccctga	tccgtcagtt	cgtatag				1827

<210> 2280

<211> 585

<212> DNA

<213> B.fragilis

<400> 2280

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cacctgcagc	aacaattgcg	tgtggaaaag	atggctttcg	gtgtcttagg	tatctttctg	180
ggaatagtgt	gttacacttt	ttggagaaat	gtagctccag	gttggatttc	atggattttg	240
ctgggaatgg	tgatattggc	tttgctcatg	cagactctta	tgtttcggat	tatatatacc	300
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tttttagggg	attattttat	ttatcataag	accggtgacc	ggttaaaagg	gtttagagat	540
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<210> 2281
 <211> 1188
 <212> DNA
 <213> B.fragilis

<400> 2281
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 gttgctacag agtctcgggt gcaatcgatt tcttttgaag tcggttcttc tatgatagct 180
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 aataaggaaa cgggtaaaca aacttcttta ttagaacctt tatacgaac agcacgcttt 660
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 gacaatcata tatatcggat aacgggagaa tcgattgaac cactttatat ggtagatttg 780
 aaagataagg cttttccgga gagtataag cagcgtcagt tccaatgtaa tgatttgaat 840
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 tcggtagagg gaaaacaaag tcggattttc tttatttatt catctgaagt actatgcgag 1080
 caaaagaaat tgtctgctga agaagatatt aatgaaaaaa tgtccagttt gctagggcag 1140
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<210> 2282
 <211> 1875
 <212> DNA
 <213> B.fragilis

<400> 2282
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 agtaataaac tgtattatac agtagtggct ccggaaggaa atgacgttat cactctcgat 180
 cctgtcacac tgaaagaaga agttcttttg cgaggtatcc ccgagcaggg attcagttgg 240
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 ctggccagat atgacatcgc cagcggaaaca tcagaacggc tcacttacgg taatcacagc 420
 acttatatgc aggacatttc accggatggt aaatatctgc tttacagcag ttcaaaggag 480
 aatatcacgc aacgtccttt ctctttgagc tctttgttcc aggtaaatct tgaaacattg 540
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<210> 2283

<211> 831

<212> DNA

<213> B.fragilis

<400> 2283

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tatctctata	aagacaacgt	gcttatccat	tccggaatca	tcgataacgt	taccgacctg	180
aatacagatg	cttacaaact	gacctttcct	aaattagcat	ttggagatta	ttgtctggca	240
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cgtattagta	cagactttta	tcacagtatc	ctcggaact	cgggattctc	catagcaatc	780
aatcccgcact	gggacgggtat	acatgacgat	gatgaaacaa	tcatacctta	a	831

<210> 2284

<211> 822

<212> DNA

<213> B.fragilis

<400> 2284

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tacaagaacc	tattcgataa	agaaacacag	tttatgcgcc	cgcgttatgc	cgacggacgt	180
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catctgccgg	atggtaaaac	gtttacgggtc	attgccgaaa	atttatcgaa	agaacataaa	720
tatatcgaca	gtatcacact	gaatgggtgaa	ccctatacta	aaaactacat	ttcacatgaa	780
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<210> 2285

<211> 1038

<212> DNA

<213> B.fragilis

<400> 2285

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ttatatatga	agacacatct	tatatcttta	tggttcacga	cttttggggg	gatggcttgt	180
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<210> 2286

<211> 1170

<212> DNA

<213> B.fragilis

<400> 2286

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gatacttctg	tcagtgtcgt	gtttaaaacc	cggcaactac	cttctaccaa	aggagaaaat	180
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gacattttcca	tctctccgga	cgcgatttgg	gacttgggaag	aactcaaatt	caataatcaa	1140
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<210> 2287

<211> 1521

<212> DNA

<213> B.fragilis

<400> 2287

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agtctttata	ttacattatc	tcacattgcc	tctgtaagag	gtaagagcgt	agcatacctta	180
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aaactcatac	ccacttctct	ggaaggagga	gatcgccccac	gaccgatca	ttcactaaag	300
aaacaacaaa	tacttaacat	tatgaaatca	tttaaaatca	tgctcatcac	ggtattatcc	360
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<210> 2288

<211> 1128

<212> DNA

<213> B.fragilis

<400> 2288

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gaaatggaat	tcatcgacag	ccccaatgaa	caggtgacca	ttcaactaac	cactaccatc	180
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<210> 2289

<211> 894

<212> DNA

<213> B.fragilis

<400> 2289

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gcattgctgg	ctgaaaacat	aggaaaactt	tcctctttgc	aggataagtt	gtatgctcag	180
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ccatcggctg	aagaactcga	tcatgattat	ctttggcgca	tcaacagatg	cctgccggag	360
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gagcgcagct	attggggacga	ctatatgaag	gcttattcgg	atatgttgac	ccatacttcg	720
acggaagaag	caccttggta	tgtgattcct	gccgataata	agtgggttc	gcgttatgca	780
gtaggacaga	ttttatgtga	ccgcatgaat	gaacttgatt	tacattatcc	ggaaatgcct	840
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<210> 2290

<211> 210

<212> DNA

<213> B.fragilis

<400> 2290

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tatcgcgtgg	taacagaaac	atcctgtttt	ggagttagag	tgataaaactg	tacatcaggt	180
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<210> 2291

<211> 282

<212> DNA

<213> B.fragilis

<400> 2291

aaagtaacta	tgaacattaa	accattagca	gacagagtgc	tgatactccc	tgcacctgca	60
gaagaaaaaa	caattgggtg	tatcattatt	cctgatacag	caaaagaaaa	acctttgaag	120
ggtgaagttg	tggcagttgg	tcacggtagc	aaagacgaag	aaatgggtatt	aaaggcaggc	180
gatactgttc	tttatggaaa	gtatgctgga	acggaacttg	aagtagaagg	taaaaaatac	240
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<210> 2292

<211> 1269

<212> DNA

<213> B.fragilis

<400> 2292

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ccgggtgaaga	aatggtaaat	gcataatca	ttagtccccg	aaggatacag	cactaatgga	1200
aagtcggcgc	ccactccata	cgactcacat	aatgacttat	atctctggca	atcaccttat	1260
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<210> 2293

<211> 903

<212> DNA

<213> B.fragilis

<400> 2293

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<210> 2294

<211> 1161

<212> DNA

<213> B.fragilis

<400> 2294

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<210> 2295

<211> 1281

<212> DNA

<213> B.fragilis

<400> 2295

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aatgccggtc	atacacttga	attcgaagga	cagaaatatg	tgcttcgttc	cattccttca	180
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gaacagttgg	gcgtacagat	caagattgtg	tcggtaggtc	ctgaccgcga	acaaactatc	1260
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<210> 2296

<211> 1374

<212> DNA

<213> B.fragilis

<400> 2296

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gagtggaaga	tgacaaacaa	taacttgaat	tataaagagt	atgcccact	ggccggggga	300
ttctatcctt	cgaagtttga	tgcagacaaa	tgggtagcag	ccatcaaggc	ttccggagct	360
aaatatattt	gcttctactac	tcgtcatcac	gagggattct	cgatgttcga	taccaagtac	420
tctgattata	acattgtaaa	agcgactcct	ttcaaactgt	atgtggtgaa	ggagctggcc	480
gatgcatgtg	ccaaacatgg	catcaaactt	cacttctatt	attcacatat	agactggtat	540
cgtgaagatg	ctcctcaggg	aagaaccgga	cgtagaaccg	gacgtcccaa	tccgaaagga	600
gattggaaga	gctattatca	gtttatgaat	aatcagctga	cagagttgct	gactaattat	660
ggtccgatcg	gcgctatctg	gtttgacggg	tgggtgggatc	aggacatcaa	tcccgatctc	720
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actaaaactt	tgattcacta	tctggtgaaa	gctgccggta	aagatgcaaa	tctgttgatg	1020
aacatcggtc	cgcaacctga	tgggtgaactt	ccggaagtgg	ccgttcagcg	cttgaaggaa	1080
gtgggagagt	ggatgtcgaa	atatggtgaa	actatttatg	gaaccagagg	cgggtctggtt	1140
gctccgatg	attggggagt	aacgactcaa	aaaggcaata	aactttatgt	acacattctt	1200
aatttacagg	ataaggcact	cttcttgcc	attgtcgata	agaaagtga	aaaggcgggtg	1260
gtctttgctg	acaaaacacc	ggtacgtttc	acaaagaata	aggaaggaat	tgtattggaa	1320
cttgctaaag	ttccaacgga	tgtagactac	gtggtagaac	ttacaattga	ctaa	1374

<210> 2297

<211> 207

<212> DNA

<213> B.fragilis

<400> 2297

aaagaaagga	tcagaaatgg	atacaaacga	gttaaaacaa	agacagcatt	tcatttcaat	60
caggacgtta	ctggttggtta	cggctcttgc	tctgtaggtc	tatatgtctt	tttctatggc	120
ctattcatcc	agaagatttc	aagaaagtac	ttcaattatc	gaatgggtaa	acgattagaa	180
aaagaagatg	tgaggataat	taactga				207

<210> 2298
 <211> 1515
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (58)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2298
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 ttactttacc tgatattcta ccgggtactg atttatcaaa aacaaccggt aaaaatacct 180
 tttcaccggt tgagtgtatc cggagtattg ctacttgcca ccgccctcct gttcatcccc 240
 atacggggag gtttcacggt gtcgaccatg aacctgagca aagcctactt cagcagtaat 300
 cagcggttga accatgcggc tatcaatcct tgtttcagcc tgatggagtc attgtcacgc 360
 caggacaatt tcgacaagca atatcgattc atgccagccg aagaggcaga caaactcttt 420
 gccgaactca aagaccagcc ggttgcccc actgacagca tcccacaact cttcacgacc 480
 gaacaccgga acgtgatatt aatcatactt gaaagctttt cgtccaaact gatggaaacc 540
 ctccggaggag agtccaatgt ggcaatcaac atggatcagt tcggacgtga aggggtattg 600
 ttactcattt tctttgcca cagcttcggc accgaccgtg gactggcagc catcatcagt 660
 ggttatccgg cacaaccgac taccagtatt atgaagtatc caaagaaaac gcaacacttg 720
 ccttcgatcc ccggcagcct gaagaaagca ggatacgacc tgcaatacta ttacggaggt 780
 gacgccgatt ttaccaacat gcgctcttac ctgatccagg caggaataga caacatcggt 840
 tcggataaag atttccgctt ttccgaacgt ctacgcaaact ggggagcgca tgaccatgtg 900
 gtgtttcaacc gtctgtctga cgaactgaaa cagcatacac cccaaaaacc ctttatgaag 960
 atattgcaga cttcaagcag tcatgaaccg ttcgaagtcc cgttccgacg attggaaaat 1020
 cccagactaa acgcttttgc ctatgcagac agttgtgtctg gcgactttgt acgtcagttc 1080
 aaagagactc ctttatggaa aaatacggta atcgtattgg ttcccgatca tctgggagcc 1140
 tatccgcagg acatagacaa cctgaccgta gaccgctatc ggattccgct gattttcata 1200
 ggaggtgccc taaaagagcc cagacagata ggtacttacg gctcgcagat tgacattgcc 1260
 gccacactgt tgggacaact cggattaccg cacgaagagt ttatctttag taaaaacatg 1320
 cttaatccga actcacctca cttcggatct ttcaccttcc caaatgcttt cggaatgatg 1380
 acaccggaga atgaggtcgt attcaactgc gaatcgaact ccatcgtctc agatgaagga 1440
 acacataaag gagagaattt acccaaagcc aaagcatacc tgcaaaagtt gtatgacgac 1500
 ttggctaaac gataa 1515

<210> 2299
 <211> 666
 <212> DNA
 <213> B.fragilis

<400> 2299
 cttatggacg taaaagaaca actgaaagat ataaaaaac aactccgcct ctctatgaac 60
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 gaattgcccc gtatcaaaaag cattgctgcc gcttacgaga agagtcatga tctggcacia 180
 gccttgtgga aagagaatat ccgtgaatgt aagattcttg caggcttatt acagccgata 240
 gatactttct ttcccagat agccgatatt tgggtagagg atattcgaa tatcgagata 300
 gctgaactga catgtatgaa tctgtttcag aatttgctt atgctccggc gaaaactttc 360
 caatggattg cggatgaggg ggaatataca caagtgtgtg gctatcttac catagcccgg 420
 ttgctgatga aaaagggaga tatggcccag cgtcctgccc gtgagttact cgatcaggcg 480
 atttgtgccg tacagtcagg gagttatcat gttcgcgaat cggcaatgct tgccatccgt 540
 aagatatgc agcatagtga ggaacatgct tttcaagttt gccgtctggt agaaggcatg 600
 gagaactctg aaaaagaggg ggaacagatg ctgtatgcga tgggtgaaaga cgagataaac 660
 gattga 666

<210> 2300
 <211> 1425

<212> DNA

<213> B.fragilis

<400> 2300

tttatcaagg	tcattgctat	gaagttcaaa	tcaaccttta	tgactgcatg	tctggggatc	60
ggtcttttgca	cctcctgcac	ccccgaaact	ccgacagcac	cccaagacta	cactcagtac	120
gtaaacacct	ttatcggagc	agccgacaac	ggtcacacct	tcccgggtgc	ttgcctgcct	180
ttcgggctga	tccaggcaag	tccggaaaacc	aacgccatcg	gatggcaata	ttgctccgga	240
tacaattatc	aggattcgct	gatctgggga	ttctcacaga	ctcacctcaa	cggcaccggt	300
tgcatggatc	tgggtgatct	actggtaatg	cctgtcaccg	gacagagagt	tcgggacgac	360
tataaaagcg	gatttttctaa	aaagacagaa	agcgctactc	cgggctacta	taccgtagaa	420
ctcgataaat	ataaggtaaa	agcagaactg	accgctacgg	atcatgtagc	cctgcatcgt	480
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tggaatcccc	aacaatacaa	atcgcatgtc	aaagcctgtg	aaatcaactg	ggaagatgct	600
caaacactga	ccggacacgt	acgtagcagt	gtatgggtaa	accaagattt	gtattttgtc	660
atgaaattca	ataaacccgg	gaccgactcc	atctatctgc	cgatggaaga	gacggaaaaa	720
ggaaaacgcc	tgatcatgag	cttcgacatg	aaaccggacg	aacagttgct	gatgaaagtc	780
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tgggacttcg	acgggacaag	acaaaaagca	aaagacagct	ggaacagtta	cctgagccgc	900
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ctgatacaac	ctaataatat	tgctgacgtg	gacggaagat	accgcaatgc	caaagattcg	1020
atagtaaaat	cctcatcagg	cgtttattac	tctacttttt	caatttgagg	tacctaccga	1080
gccgcccac	ctttctatac	tctggcgtga	cccgaaacgag	tagacggctt	tatcaattcg	1140
atgatcgaac	aaaatcaggc	acaaggctat	ttaccgctct	ggaccttatg	gggtaaagaa	1200
acgaatacga	tgatcggtaa	ccactcgggt	tccggttattg	ccgaagccta	caaaaaaggc	1260
ttccgtggct	ttgatgccga	gaaagcattc	gatgccatca	aacagacact	gaccgtttca	1320
catccgaaat	cggactggga	aacttatatg	aaatacggct	actaccgcac	agacaaagta	1380
gatgccgaat	cggttttcac	gtaccctcga	atcggttttac	gatga		1425

<210> 2301

<211> 2142

<212> DNA

<213> B.fragilis

<400> 2301

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acatccggca	cgggactata	cgcacaaacg	ctgcaccaac	atgcgggaac	acagagagat	120
actgttcctg	tcacatttcc	ggtacaacat	ctggaagaag	tcgtcatcac	cgcagggcgt	180
ccgggaataa	cggcaggagc	cgtaagtaac	cggatctctt	cctccgaaat	ccatcgtgtg	240
gcaggcagtt	cgcttgccac	attgctggaa	cggatcagtg	gtgtcagttc	tctcagcaca	300
ggaacaacag	tatccaaacc	cgctattcat	ggaatgcatg	gtaaccgcat	cctgatcatc	360
aataacgggtg	cgcgccagac	ggggcaacaa	tgggcgacag	accatgcccc	cgaagtagat	420
ataaacgaaa	gcggtaatat	tctggtcata	aaaggcgcgg	acggagtaag	gtacggttcg	480
gatgcttttg	gaggtattat	cgtgatggaa	cagccccctt	tggctttcgg	gcaggaacac	540
cccaaaggca	gaatcgccac	attctacgga	agtaacgggc	atcgctatgc	ggcaaccgga	600
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tcaaattcgg	gagaccgctc	tacggcacat	tatttgctca	acaataccgg	aaccagagga	720
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cttgccgaac	gtatccgctt	gggacgtccg	gtatatacag	acccttttac	acggcatatc	900
tcttaccat	acaaaaagt	tgtccacaga	actgccatcg	gaaaagtcag	atacaatgca	960
ggtgcggcag	gtgtctttta	ctggcaaact	tcctggcaga	aagacgaccg	ccgggagaat	1020
cgcacccgac	ggatgaatca	ttcggatata	ccggccgtcg	cattgctgct	gagttctatc	1080
caaaatactt	tccgttggaa	actggattat	gggccattgg	agaccgaaat	cgggggacaa	1140
atgatattca	ccgacaatca	cagcaaaagca	gggacgggaa	tcgtccccgt	cattcccaac	1200
tacacagaaa	tgcaggcagg	cgcgtacggc	atacagaaat	accggtatga	aagaaccgcc	1260
gtagaagctg	gaattcgcct	ggataggcaa	gagacacgtg	ccggcggata	tgactggacc	1320
ggaaactatt	atgggggaaa	cagaaaattc	tgtaatttca	cgtatggcct	gggcgggcac	1380
taccgacttt	caaaatactg	ggagcttaca	tccaacttcg	cactgacatg	gagagccccg	1440

catgtgcacg	agctgtacag	caacggaaat	gaattaggat	caggcatggt	tgtccgggga	1500
gacgcctcca	tgaatgccga	acgaagccac	aaatggataa	cctcggtcag	ctaccgggac	1560
aaagtgttcc	atatccgtct	ggacagctat	ctgcaatgga	taaaggggta	tatttatgat	1620
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ctcccttata	ttccttcttt	ccacctcagt	catgaactgg	catggacgca	ccaaacaaag	1860
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aatccggcaa	ccgaccttat	tccatatacc	cctccgcct	atcatctttt	cggagcggaa	1980
gccagtatgg	agtgtcccg	aaaatacgg	aacaaactaa	actgactgt	gacagcagac	2040
aacctctca	acaggggaata	taaggaatat	accaaccgct	cacgctacta	tgcgcatgat	2100
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<210> 2302

<211> 1416

<212> DNA

<213> B.fragilis

<400> 2302

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aaaccaggta	tacctaag	aacacgtgat	ttttcgcccg	tagagatggc	gaagcgtaac	120
tacatattca	ataccattcg	tgacgtttat	catctgtatg	gtttccagca	gatagaaact	180
ccttccatgg	agatgctttc	taccctgatg	gggaaatatg	gtgaagaagg	tgacaaacta	240
ctttttaaga	ttcagaattc	cgttgattat	ttttcaggca	ttactgacga	agagctgttg	300
agtgcgaatg	cggctaagct	ggcaagtaaa	ttctgtgaaa	aaggtttgcg	ttatgacctc	360
acagtgcctt	tcgcccgtta	tgtagtgatg	caccgtgacg	aaattacttt	ccctttcaaa	420
cgttatcaga	ttcagcccg	atggcggtgc	gaccgtcctc	agaaaggacg	ttaccgtgag	480
ttttaccaat	gtgatgctga	tgtcgtaggc	agtgattcat	tgctgaacga	agttgaattg	540
atgcagattg	ttgatacgg	gtttaccgt	ttcgggtatc	gcgtttgtat	taaaatcaat	600
aaccgtaaga	ttctgaccgg	cattgccgaa	atcataggag	aggcagataa	aatagtagat	660
attacagtag	caatcgataa	actggataaa	atcggtttgg	acaatgtcaa	taaagagctg	720
gccgagaagg	gtatcagtga	agaggctatt	gcccactgc	aacctatcat	tcttctgagt	780
ggaaccaatg	ctgagaagtt	ggtacactg	aagactgtac	tttccgatag	cgaaacaggt	840
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aacgaaatag	agcttgactt	gacattggca	cgtggattga	attactatac	aggtgctatt	960
tttgagggtga	aggcgcttga	tgtgcagatt	ggcagtatca	ccggtggagg	tcgttacgat	1020
aacctgactg	gtgtattcgg	tatggcagga	gtatcggg	taggtatttc	gtttggtgcc	1080
gaccgtattt	tcgatgtgct	caaccagttg	gaactgtatc	cgaaggaggc	cgtaaatggc	1140
actcagcttc	tgtttattaa	cttcggtgag	aaagaagctg	ctttttctat	gggtattctg	1200
tctaaggccc	gcgcagctcg	tattcgtgcc	gagatattcc	ccgacgctgc	gaaaatgaag	1260
aaacagatga	gttatgcaaa	tgtaagaac	attcctttcg	ttgctatcgt	aggtgagaat	1320
gaaatgaatg	agggaaaagc	tatgctgaaa	aacatggaaa	gcggtgaaca	gcaattgggt	1380
actgctgaag	aactgattgg	cgctttaaca	aaataa			1416

<210> 2303

<211> 1080

<212> DNA

<213> B.fragilis

<400> 2303

actggaactt	ctgactatga	tttttattca	ttgtataata	tcaacaaacc	aattgaaaga	60
aaaatgaaaa	caattacatc	taaaaccatc	ttaatgctcc	tgacgggggc	ctttcttgtc	120
ttattgttta	atagttgcac	caaagatccg	gtgattcccg	aagacgaaac	aaaaaacaag	180
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ataaaaagaa	tacagacat	tacctatgaa	ctgaaggccg	gacaaggctg	gacactggca	360
gaaggtagcc	agaagaagtt	ctatgtacag	aaaaacgggg	aatataaaaa	tcaaggacgc	420
tttacgcctg	ctcccgctca	tctgatgttt	atctattact	acaatgccaa	aggcgaactg	480
atgaataacc	agtttgtgga	aaacggggcaa	gagaacatac	accagcactt	cttcacgccg	540

gaaaatataa	agccaacctt	cgacggacag	atagaagctg	acgacaacga	tccacagaag	600
ctgatagact	atctttatgt	agacactacc	ccctgggata	agacctatca	cagcggagag	660
gccgaaatca	cgggacggga	caatccggta	gggttaaaag	gaattatccg	tttcttgaaa	720
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acatgggata	ttaacctgaa	tctgcgggtc	gttgattttt	ggagtcggga	agaattttatc	900
gatatagatg	aagaagcaaa	cttagagaaa	gtgggcgaag	acagtctcga	cgagggcagc	960
aaccgtaccg	tacactccat	catggaaaact	ttcaacctga	cttggaaaga	agctctggaa	1020
gaattcataa	cctataccta	taaggccgga	gatgccgaag	gaggagctat	ctggctgtaa	1080

<210> 2304

<211> 477

<212> DNA

<213> B.fragilis

<400> 2304

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gaattggcag	atgaattgta	cgacagaatc	ctgaacatca	ttgttgtaca	gaagaagtac	180
agagaccggg	actattcagc	taaggatttg	gctaagggaac	tgaaaaccaa	taccggttat	240
ctttcagctg	tagttaattc	tgcgtttggt	atgaactatt	cttgctgct	gaacgagtac	300
agagtaaaag	atgcctttgca	cttgctgacg	gataaaagat	atgccgacaa	gaatgtagag	360
gaaatcagtg	cgatggttgg	tttcgctaac	cgtcagctct	tttacgctgc	attttataaa	420
aacgtagggtg	aaacacccaa	cggatatcgt	aaaaaacacg	cagaaaaaaa	gaaataa	477

<210> 2305

<211> 912

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (151), (197)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2305

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gtgattgttg	ccgcattggg	tgaatcgctg	nagatgagcg	gtgaaagcag	tagccgcacc	180
aacttcaatc	tgcggantgt	acagcacact	ctgctggagg	ctttgctgaa	aacaggaaaag	240
cccgtagtct	tgcgtactgt	tacgggacgt	ccgctgggtac	tcaattggga	acaggagcat	300
gtccctgcc	tctgaacgt	atgggtcggg	gggtcgggaag	ccggtccagc	tatcggagac	360
gtattgttcg	gtgcagtcaa	cccgggcggga	aaactgacca	tgactttccc	gaaaagtgt	420
ggacagatcc	cactttatta	tgcacacaag	aataccggac	gaccgctgaa	agaaggcaaa	480
tgggtcgaga	aattccgcag	taactatctt	gacgtggaca	atgatgctct	ctatccgttc	540
ggatacggac	tgtcgtatac	gaccttcoga	ttcagtgaca	tcacattgaa	ccgttcgtcc	600
atcggaatgg	acaatgaact	ggtagcctcc	gtcaccgtaa	ctaataccgg	agaccgtgcc	660
ggcagtgaag	tgggtgcaact	ctacatccgt	gacttggtgg	gcagtgtcac	ccgtccggtc	720
aaggaaactga	aaggatttga	aaagatctat	ctgcaaccga	atgaatcaag	aaccgtccgc	780
tttacaatag	ctccggaaat	gttgaagttt	tacaatgccg	acttgaagtt	tgtagctgag	840
ccgggcgatt	tgcagctgat	gataggcccc	gatagccgga	atgtgaaaac	agcacggttt	900
acattgcgtt	ga					912

<210> 2306

<211> 201

<212> DNA

<213> B.fragilis

<400> 2306

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gtgaatctta	ttcttttcta	ttcccttgtg	tatccggttc	aacgcaatgt	aaaccgtgct	120
gttttcacat	tccggctatc	cgggcctatc	atcacgtoga	aatcgcccgg	ctcagctaca	180
aacttcaagt	cggcattgta	a				201

<210> 2307

<211> 309

<212> DNA

<213> B.fragilis

<400> 2307

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ctcgatatcc	gtataaagat	gaagaaaagta	aaaaagtcaa	cctgggttac	tgctgccttg	120
ctgatctatg	tatctgcgac	agcggcttat	ctgctgcctc	gcaatcatga	ggtgagcgac	180
acagagaaat	atctcaccct	ggctgcttcg	tatgtcattg	ttctggttct	ctggctgggtg	240
ctgagaaaaa	aagaacagat	gcagcagcgc	cgccggggagg	aagaacatat	gaataacctg	300
aaaaagtag						309

<210> 2308

<211> 2124

<212> DNA

<213> B.fragilis

<400> 2308

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<210> 2314

<211> 1314

<212> DNA

<213> B.fragilis

<400> 2314

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<210> 2315

<211> 498

<212> DNA

<213> B.fragilis

<400> 2315

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<210> 2316

<211> 1065

<212> DNA

<213> B.fragilis

<400> 2316

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<210> 2317

<211> 2322

<212> DNA

<213> B.fragilis

<400> 2317

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<210> 2318

<211> 294

<212> DNA

<213> B.fragilis

<400> 2318

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<210> 2319

<211> 243

<212> DNA

<213> B.fragilis

<400> 2319

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gtatatcgat	tgactttggc	agactttgcc	atgctgaaag	tgggtgctgc	aatcagtgcg	180
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<210> 2320

<211> 1026

<212> DNA

<213> B.fragilis

<400> 2320

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<210> 2321

<211> 840

<212> DNA

<213> B.fragilis

<400> 2321

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<210> 2322

<211> 2814

<212> DNA

<213> B.fragilis

<400> 2322

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<210> 2323

<211> 771

<212> DNA

<213> B.fragilis

<400> 2323

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<210> 2324

<211> 555

<212> DNA

<213> B.fragilis

<400> 2324

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cccacagacg	atacttatac	ttttgtcatc	agcatcatta	tttccctggg	agcctttata	480
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<210> 2325
 <211> 1281
 <212> DNA
 <213> B.fragilis

<400> 2325
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<210> 2326
 <211> 270
 <212> DNA
 <213> B.fragilis

<400> 2326
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 aaaaaatctg tggttaatccg tgtaatctgt ggtgaaatta attattgcgt tgaacgggca 180
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<210> 2327
 <211> 765
 <212> DNA
 <213> B.fragilis

<400> 2327
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 aatggttggg tcgattataa tattccgcag atatactggc agatagggca tcctgccgcc 180
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765

<210> 2328

<211> 1221

<212> DNA

<213> B.fragilis

<400> 2328

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<210> 2329

<211> 1569

<212> DNA

<213> B.fragilis

<400> 2329

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<210> 2330

<211> 1248

<212> DNA

<213> B.fragilis

<400> 2330

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gaagaactga	tgaaaacgtg	gatggccaag	atggaggaca	attgcctggt	catctccgcc	1140
cgtgagaaaa	tcaatataga	cgaactgaag	agtgtgggtt	atcagcgagt	gaaagaattg	1200
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<210> 2331

<211> 1413

<212> DNA

<213> B.fragilis

<400> 2331

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<210> 2332

<211> 1407

<212> DNA

<213> B.fragilis

<400> 2332

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<210> 2333

<211> 684

<212> DNA

<213> B.fragilis

<400> 2333

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<210> 2334

<211> 2949

<212> DNA

<213> B.fragilis

<400> 2334

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acagggtata	gcggtatgga	tccggagaca	ctaaccaacg	tagagagtgc	gactttgtca	2880
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<211> 1299

<212> DNA

<213> B.fragilis

<400> 2335

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gagttcgaag	gaacacctgt	gctgaaagta	cagaaagaag	gtctgacagc	gatggctaata	180
actgctttcc	gcgacgtatc	tttcatgtct	cgccgtgctc	acaacgagca	ggtagcgaag	240
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<210> 2336

<211> 536

<212> DNA

<213> B.fragilis

<220>

<221> unsure

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<223> Identity of nucleotide sequences at the above locations are unknown.

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nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	180
nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	240
nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	300
nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	360
nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	420
nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	nnnnnnnnnnnn	480
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<213> B.fragilis

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(1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17), (18)
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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2338

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nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	180
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	240
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	300
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	360
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	420
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	480
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	540
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<210> 2339

<211> 312

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2339

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ggtgagatgt	atggaccaca	tcagcattta	cgtatcgaaa	taaattatgt	gaaaaaggga	180
agctgcattc	tccatccgga	tcattgagagt	atcagtcttc	accacggggc	tggaaggatc	240
ngcggagcgt	tcgtannnnn	nnngnnnnngt	accaacggng	gctcagatat	tnntannnaa	300
nnnngggctc	cc					312

<210> 2340

<211> 294

<212> DNA

<213> B.fragilis

<400> 2340

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gacgaagctt	actatctgat	gggaaatgct	taccgcaagt	taggagactg	gcaaaaagcc	180
ctcaataatt	atcaatccgc	cattgaactc	aatcccgcga	gcccggctct	ccaggcacgc	240
aaaatggtga	tgatataatt	gaactttctac	aataaagata	tgtataatca	ataa	294

<210> 2341

<211> 846

<212> DNA

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gccgataagg	ttgcaggatt	tataatcggc	atgagccatg	actatggccc	acatgtatta	1260
ctggcagttt	tatttattat	caccaatttg	tttacggagc	tgataacaaa	caatgccgct	1320
gctgcattgg	cttttccggt	ggctctgtcg	ctttcgggtc	agttgggtgt	cgaccctaca	1380
ccgttctttg	tgggtcattt	tatggctgca	tctgccagtt	tttctacacc	gatcggttat	1440
cagacaaatt	taatagtaca	gggtatcggc	aactataagt	ttatggattt	tgtcaggatc	1500
ggattgccat	taaatcttat	aacattcctg	atttccatat	ttctgatccc	tttaatctgg	1560
ccgttttag						1569

<210> 2344

<211> 501

<212> DNA

<213> B.fragilis

<400> 2344

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acttaccgtt	gtattctgac	caacgattac	aagtcatcga	caagggacat	tgttgaattc	180
tacaatctgc	gtggcggcaa	ggaacgtatc	tttgacgaca	tgaacaacgg	attcggttgg	240
agcaggctcc	ccaagtcatt	catggcggag	aatactgtct	ttcttctgct	tactgcattg	300
atacacaatt	tctacaagac	catcatgagc	aggcttgaca	ccaaggcttt	tgggctcaag	360
aaaacgagtc	gcataaaggc	ttttgtcttc	agattcatct	ccgtacctgc	caagtggatc	420
atgactgcaa	ggcaatacgt	gctgaatatc	tacacagaga	accgagctta	tgcaaaaccc	480
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<210> 2345

<211> 819

<212> DNA

<213> B.fragilis

<400> 2345

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gaaatgcaga	aggacaaaac	agtcattgct	gggtgaaact	ttatgaataa	ggagataact	180
cctccaacgt	ggtactacca	cacgtacaat	tactacctga	atgtaaccat	tttaccttgg	240
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gaagggcaat	tctggaaaata	catgcccgcg	gttgtagtag	gcacttccga	tccttttacc	420
tcgtccggca	atggagtgtg	ggctccgacg	gaaggtaacg	gatacttcag	tcgtttctac	480
atcgagccca	ccaggcatgt	ccaattagga	agagagacag	tgggagtaca	cctctcctat	540
ctttataaca	aaaggataga	gtacaaactg	aatgggatcg	cggcagggtat	cagttataac	600
ccgtcttttc	atccgcaatt	gagattaatt	gccgaatatg	attcgaaaga	ttttgcatta	660
ggtgccacct	atttgctttt	caaccatttg	catgcacaag	tggaaactcca	aagaatgaaa	720
tatttccacag	gtggattgac	tttccagttc	cgcttgtccg	gaaaagatgg	aatgaaaaag	780
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<210> 2346

<211> 1176

<212> DNA

<213> B.fragilis

<400> 2346

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cacaccgact	acaatggcgg	atttgttttc	ccggggagcta	tcgataaagg	tatgatcgcc	180
gaaatcaagc	ctaacggcac	agataaaagta	aacgcttact	ctatcgacct	gaaagattat	240
gtaactttcg	gattgaacga	agaagatgct	ccacgcgcca	gctgggcaag	atataatattc	300
ggtgtgtgcc	gcgaaatgat	caaacgtggc	gttgacgtga	aaggattcaa	taccgctttc	360
tccggagatg	tgccattggg	tgccgggaatg	tcttcatcgg	ctgcttttga	aagtacttat	420

gcctttgcg	tgaatgacct	gtttggtgaa	aacaaaatag	acaaattcga	attagctaaa	480
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<210> 2347

<211> 1131

<212> DNA

<213> B.fragilis

<400> 2347

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<210> 2348

<211> 843

<212> DNA

<213> B.fragilis

<400> 2348

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<210> 2349

<211> 273

<212> DNA

<213> B.fragilis

<400> 2349

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<210> 2350

<211> 195

<212> DNA

<213> B.fragilis

<400> 2350

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<210> 2351

<211> 1095

<212> DNA

<213> B.fragilis

<400> 2351

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<210> 2352

<211> 1569

<212> DNA

<213> B.fragilis

<400> 2352

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<210> 2353

<211> 192

<212> DNA

<213> B.fragilis

<400> 2353

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accaacagat aa 192

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<210> 2354

<211> 396

<212> DNA

<213> B.fragilis

<400> 2354

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<210> 2355

<211> 312

<212> DNA

<213> B.fragilis

<400> 2355

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<210> 2356

<211> 252

<212> DNA

<213> B.fragilis

<400> 2356

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<210> 2357

<211> 918

<212> DNA

<213> B.fragilis

<400> 2357

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<210> 2358

<211> 1383

<212> DNA

<213> B.fragilis

<400> 2358

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<210> 2359

<211> 252

<212> DNA

<213> B.fragilis

<400> 2359

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<210> 2360

<211> 840

<212> DNA

<213> B.fragilis

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<210> 2361

<211> 1191

<212> DNA

<213> B.fragilis

<400> 2361

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ggcgatgaat	accagcaggt	aaccatctat	aaattcggag	ttgaaaaata	a	1191

<210> 2362

<211> 522

<212> DNA

<213> B.fragilis

<400> 2362

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gcgcggaagt	tgacagatga	ccactcggat	gccgaagatg	ccgtgcagga	agtgatgctg	120
aagtttatgga	aacttcgtcc	gaaactggac	gaataccata	gcattgaggc	ccttgccatg	180
actatgaccc	atcatacctg	catggatata	ctcagaggga	aacatcccga	caacctatcg	240
ctcgacagcg	tacaggctgc	cagtcgggtc	gccacccccg	aacgcttgct	tgaagagaaa	300
gacgaattca	gcctgatgcg	acatatcatc	agtacacttc	cacctctgca	acagaccatc	360
ctccggatga	aagatgtaga	agagtacgaa	accgaagaaa	tcgccgagat	aacaggatgc	420
agctccgaag	ccatccgcag	caatttatcc	agggcacgga	aaaaagtaag	agacatttac	480
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<210> 2363

<211> 630

<212> DNA

<213> B.fragilis

<400> 2363

cgactcataa	atctaccctt	aatcgtgtat	tggatgatag	ttgcggattt	taggatagag	60
aaattattaa	agtgtcacct	aataaataac	aacattatga	aaaaattatt	attattatct	120
gtattatcaa	tttttatgat	tgccctgccac	caaccagata	ctccaccata	ttcatacagt	180
atgaatatag	atatgcaaat	catctcttct	ttggagacta	cctatcctct	tgataactta	240
gaaacagtta	ttattaactc	tagattagaa	ctcgcttcgt	caagttatcg	aataaagacc	300
ttgatcagtt	ctaatgactt	acaagagagt	tggcttgaac	gtccaatcgt	tatgctggga	360
agagaaggac	atagatatct	gtctttacca	ataactttta	atgaagagaa	agatagatat	420
aatgtgaaaa	ttgaatttta	ttgtccagaa	atttttaaag	acgataaata	ccacacaata	480
aatatcgttt	attcgattgt	taaagggaag	tatttatata	atttagaatc	ttttacatta	540
gattcatatg	caggagaaat	agagaatcag	ggagagaata	atgctcctat	tattgtattc	600
tctatcaaca	cagccgaaaa	aaaagagtaa				630

<210> 2364

<211> 1443

<212> DNA

<213> B.fragilis

<400> 2364

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atgaaaaaga	ttgtgttatt	atcgctgttt	gccctgtgcc	tccactact	tgtgatggcg	180
caaagcaata	atgacgacct	ttatttcgta	ccttctaagg	aaaaaaagca	ggaagccaaa	240
aagactcctg	tgaagaagga	accggaaaaa	aaagtgtgtca	ccacgaacat	ttatacgtct	300

ccgggtacta	cggtagtagt	tcaggaccgt	aaaggaaaca	aacgcgatat	gcgtgatgtg	360
gatgagtata	accgccgtta	cgatgtcaaa	gataacgagt	tcgcaatgga	ggacgataca	420
ttatacgtaa	aagaaaaagc	tgtctccgat	cgggatgggtg	aatgggtgaa	cgggttcaat	480
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gcggtaagca	ttagcagccc	gctttactgg	gacattgttt	atggaaccaa	ttcctgggat	600
tggaatgttt	atacagacgg	tttctatgct	tatgcattcc	cgacattttac	caaccgctta	660
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tcctcaggta	gttctactcg	ctctagtagt	agttattctt	ccggtagcag	aagtagtggt	1380
agcagttctc	gttcgacaag	tgggtggaggt	agctacagca	gaagtagcgg	tggtcgaaga	1440
taa						1443

<210> 2365

<211> 201

<212> DNA

<213> B.fragilis

<400> 2365

aattattcaa	aaccatcaat	aataactaat	cataatccct	accacaatga	agaaaagtat	60
tattctgtta	ttcatcagtt	tactttttatc	cccgtatgc	ataaaggcac	atcaaccgga	120
attctccact	gocggatttt	tccggctggc	agactccgga	cgagacgtct	attccatgaa	180
tcctgcatgg	cgttttttata	a				201

<210> 2366

<211> 231

<212> DNA

<213> B.fragilis

<400> 2366

attatggcaa	aaatcaaagg	agcaatcgta	gtcgacacag	agcgttgcaa	aggggtgcaac	60
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gggtataatt	atgccagca	gattcttgaa	gatacctgta	acggatgcag	ttcatgcgca	180
accgtatgtc	cggacgggatg	tatctctgtt	tataaagtaa	aagtagaata	a	231

<210> 2367

<211> 450

<212> DNA

<213> B.fragilis

<400> 2367

cacattaaaa	aggacatgaa	gaaaattgga	atthgttgcg	accacgccgg	tttcgaattg	60
aaagaatacg	taaggggctg	gctggaagca	aaagggtggg	aatacaaaga	cttcggaact	120
tactcgacag	acagctgtga	ctatcccgat	tttgcccatc	cattggcact	ggctgttgaa	180
gccagcgaat	gctatccggg	aattgccatc	tgtggtagcg	gtaatggtat	cagcatgaca	240
ttaaacaaac	atcagggtat	tcgtgccgca	ctctgctgga	cagcagaaat	cgcacacatg	300
gcacgcctgc	acaacgatgc	caacgtattg	gttatgcccg	gccgttatat	cagcacggaa	360
gaggcggtata	tgattatgac	ggaatttttc	tcgacagagt	ttgaaggcgg	acgccaccag	420
aaacgcattg	ataaaattcc	tgtaaagtga				450

<210> 2368

<211> 501
 <212> DNA
 <213> B.fragilis

<400> 2368

attatgaaaa	aattagtagt	attagggatg	ggcgtatgcg	ttgccttggc	atttgcttca	60
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gctgagcctc	aggtagaagc	tcccgtagaa	gttactccgg	tagttgctgc	tccggtagaa	180
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ggtgctgatg	gattgaaaga	ttatagcgta	gtatgcggta	gcttcggttt	gaaagcaa	300
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gctgagacag	ctatgtatcg	tgtgattgta	aatacatttg	ccgatagggc	ttctgctgcg	420
caggcacgtg	atgctttcaa	ggctaaatat	cctagtagaa	aagacttcca	gggcgcctgg	480
ttgttatata	gaatctatta	a				501

<210> 2369
 <211> 1587
 <212> DNA
 <213> B.fragilis

<400> 2369

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tttggttggtg	tgggaggtgc	aatgggagca	ttaggaggag	atatactac	tatggggaca	180
aatccggctg	gcatagggat	ttatcgaaat	aatgatgtta	tgacttcttt	tagtttttct	240
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tcttatgata	acattggaat	tgtctttgct	tctaaaatag	gtaatcacac	tccattacgt	360
tatgtgaatt	ttgggtttta	ttatcatcgt	gcaaaatctt	tctataaaaa	tatgtttatg	420
gagggcgctt	tgaattattc	gcaaatcgat	tatatgactg	gacaagctaa	tgggatgttg	480
gccaatggcg	tgagtcctaa	ggaactgtca	gataataaat	tgaatcctta	tagtgataat	540
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gagtatatgt	gtgtcttgcc	acaaactcca	tattctactt	ttcgttcaag	agaaaaagg	660
ggaattgatc	agtatgattt	taatatagcc	tttaatatata	gtgacagagt	ttatctggga	720
ctgacaattg	gagcttatga	tgtagactat	actaaatcat	attactattc	agaagactat	780
ggtgataaac	agaactataa	tataggaagt	atgaatcgca	ttagtggttc	cggttttgac	840
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atctggatgc	ataataatga	tacaggaaaa	gatgaacttc	ttaatagtta	ttttgacact	1020
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tataatgtca	gccttgata	tactgttga	caaaatttag	ccatcggtgc	tgaatatgaa	1140
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acgaatgcag	caaagatggg	tatgaaggga	gttaatacat	ttcgcatagg	tgccgaatat	1260
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tctaaatcac	ttagcaatta	tacttttaggt	attggatatc	gtgggactat	gatttatgca	1440
gatctagcct	ataaattctc	ttcttataaa	gaagacttct	atcctttcta	taatgagttt	1500
aatgatagag	gcattgtaac	tcctaagtga	actaagataa	ctaatacccg	tagccaagta	1560
ttatttactt	taggtatgcg	ttttttaa				1587

<210> 2370
 <211> 1128
 <212> DNA
 <213> B.fragilis

<400> 2370

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gcctcagcgc	agacaaaaga	gcattattat	agcgaaaaag	ctaaagataa	tatctttatc	120
agcgtgggtg	taggagcaca	gggatgtgtc	aaccccgaca	actttgatta	tggctttgga	180
catgccataa	ctccactgat	acacgcacat	gtcggtaaac	tgttcaaccc	tatttggggg	240

atccgtggcc	aggtagccgg	atgttggagt	acattatact	ccgaatatgg	aatgccggaa	300
ggcgaataca	agaagatgaa	gaataaaaaa	tacttcactc	tacgtgccga	cggattgttc	360
aacttgtcaa	acgctatcgg	aggctataat	cccgatcgct	tggtcactgt	atccgtattt	420
gcagggtccg	gacttacggt	tgccaaggcc	tatggcaatc	aagataaaact	gaatgcgttg	480
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gacggcgctg	tttctctgac	agcagggtgtg	acttacacat	tcgggtggcaa	gagattcggt	660
tcttgccgtg	cgcaggtaga	ccaaaacgct	atcaacgaag	agctgaatcg	ttacagaagt	720
gaactgtcaa	aagcgcaatc	ggacttagcc	gatgccaaaa	acgcactggc	taacgtaaaa	780
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ggtagtgcc	agtggaaaca	gaaactgtct	gaggcccggtg	ctcaagccgt	ttatgacgct	1020
cttatcaaag	aaggcgtaag	caaagatcaa	ctggaactcg	tcggtttttg	tggaacagcc	1080
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<210> 2371

<211> 777

<212> DNA

<213> B.fragilis

<400> 2371

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tgtgcgcgta	agtttgcttc	gcaagggttcg	gatttgattc	tgaatgcccg	taacgtggca	120
aaacttgaag	agttgaaagt	agaactggaa	gctaaatacg	gagtacgtat	ctgcctgttg	180
ccgtttgatg	tacgtgatcg	gaatgcagcg	accatggcac	tggtcttctt	accggaagag	240
tggaaacgta	ttgatgtatt	ggtgaacaat	gccggtcttg	tgattgggtg	ggataaagaa	300
tttgagggaa	acctggacga	atgggatatt	gtgattgata	ctaataataa	agccttgttg	360
gctatgacgc	gtatagtgg	tcccggaatg	gtggaacgcg	gacacgggca	tatcattaat	420
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gccgctgtca	aagcactttc	ggacgggttg	cgtattgatt	tggtagatac	tccgcttcgt	540
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gataaggatg	ctgccgatgc	tttttataag	ggtattcgct	cgttgactgg	agacgacata	660
gctgaaacag	tttattatgc	tgcctctgct	cccgaacata	tacagatagc	agaagtgcgtg	720
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<210> 2372

<211> 882

<212> DNA

<213> B.fragilis

<400> 2372

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agctttttatc	cgggcaaagt	accggttcct	ttgatgcata	tcgattcaaa	gtggaaattt	180
aaggaaatga	ttcagttccg	tgacgaatat	gccaaaaagt	atggctggaa	tctgattgtg	240
gaaagcaata	tggaagcttt	tcatgcaggg	gtagggcctt	ttacgcatgg	cagtaagggtg	300
catacggact	tgatgaaaac	acaggctttg	ttgcgtgcgt	tgataaaata	taaatttgat	360
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tctttccgtg	ataagttcca	tcaatgggat	ccaaaaacc	agcgtcccga	attgtgggat	480
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accgaactgg	atatctggca	gtacattcgt	ttggagaata	ttccgattgt	accgttgat	600
tatgccaaag	agcgtcctgt	ggtgcagatg	gacggtaact	tgattatggc	tgatgatgaa	660
cgtctgccc	aaaaataccg	tgatcagatg	gaaatgaaaa	tggtacgttt	ccgtacattg	720
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gaagagatga	tgactaccac	taagagcgaa	cgtacgaccc	gtgttatcga	cttcgaccag	840
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<210> 2373

<211> 228
 <212> DNA
 <213> B.fragilis

<400> 2373
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 cttacctcac actacattcc acctgtcagg acactactta ttgttgatcg ttcattcattt 120
 ttttatcttt tccatgtcac gttttccttc cttctccgtc ttgcttatgt aaatggaact 180
 aaaacaattc aaaatagccg ttcttccact ccgcgacaaa ctgcttag 228

<210> 2374
 <211> 240
 <212> DNA
 <213> B.fragilis

<400> 2374
 aatatagatg aagaaataat cataaaaaatg aaagaagaat ataagttaag ccacttgaaa 60
 gaactcgaag ccgagtccat ccatattatc cgcgaggtgg cggcgggagt tgagaatccg 120
 gtcattgctgt atagcatcgg gaaggattct ttcgttatgg tacggccttg ccgaaaaaag 180
 cttttatccg ggcaaaagtac cggttccttt gatgcataatc gattcaaagt ggaaatttaa 240

<210> 2375
 <211> 255
 <212> DNA
 <213> B.fragilis

<400> 2375
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 aataaagaat tgctcccga aagagttttc cgagagaaga cgaaaggaca atctgttgca 180
 aaaaaacaga ttgtttacaa aaccaaattc gatctaagag tatttgtcat gccgcaaaga 240
 tacataatat tttga 255

<210> 2376
 <211> 1476
 <212> DNA
 <213> B.fragilis

<400> 2376
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 gggtcggtag atgacggaaa gtctacattg atcggacgtt tgctgttcga tagcaaaaaa 180
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 gaacacattg attatgcctt gttgctggat ggcttgaaag cagagcgtga acagggcatt 300
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 gctattattc tggtagatgc ccgtatggga gtaattactc agacaagacg tcatacattt 480
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 cgtccgaacc tcgacttcag gggattctgt ggtaagggtg catccggcat catacgcaag 840
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 ttctttatta agcagacaac gaatgtcagc cgcacgcgta tcgacagcat aaaatataaa 1140
 gtggatgtca atacgatgga acattcgtct gttccctttt tgtctttgaa cgaaatagca 1200

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atcgatcgtg	tggaaaagaa	agacatgaat	attgccgatg	atcttcgggt	tttgaatctg	1380
cctgaattgg	gcatagctcc	tgaacattat	gaagctattg	agaaggcggg	aaaatcatta	1440
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<210> 2377

<211> 249

<212> DNA

<213> B.fragilis

<400> 2377

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agacgtccta	catcttctga	aaacccggtt	aaatggcctt	ttggggatat	gccttctgaa	120
tctccgaaag	cccttcccgg	acttgatgac	ttttttctcc	tcaaggaggc	ggttcatctc	180
cgttatcttc	accacagcaa	tcaggctctt	tgcctaaacc	tgaagaagtc	attaagggatg	240
caactgtaa						249

<210> 2378

<211> 438

<212> DNA

<213> B.fragilis

<400> 2378

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cgtttcactt	ctgtcctcgc	acatcgcaac	atgcttgaag	ccggactgaa	gaaaaaagac	360
aggcaaaaca	aggcattggg	tgatgagatt	agtgcacta	ttattttgca	atcttatttg	420
gaaactaagc	gtttgtaa					438

<210> 2379

<211> 1071

<212> DNA

<213> B.fragilis

<400> 2379

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<210> 2380

<211> 558
 <212> DNA
 <213> B.fragilis

<400> 2380

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<210> 2381
 <211> 651
 <212> DNA
 <213> B.fragilis

<400> 2381

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<210> 2382
 <211> 1980
 <212> DNA
 <213> B.fragilis

<400> 2382

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ccggaagacg	accaggtaaa	gattggcggg	tatccgatca	tcaatgtata	tgccaacctg	1920
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<210> 2383

<211> 1110

<212> DNA

<213> B.fragilis

<400> 2383

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gtgaaagtgg	aacatttcgg	ccgcctggga	ggaattgttc	ccgatccgga	cgaaatagta	1080
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<210> 2384

<211> 999

<212> DNA

<213> B.fragilis

<400> 2384

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gttagttata	atctgggaaa	tagctggaac	aaagtaaaaa	ggaataaaaa	agcaaatagc	180
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<210> 2385

<211> 462

<212> DNA

<213> B.fragilis

<400> 2385

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ggtaaaca	aaggagtga	tatggtagag	ctgtccaacg	aaatgctgga	aacctaccag	180
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ctgttcaaaa	ccggtaaaaa	aggctcggct	accctgattt	acatcgaggg	cgagttggat	420
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<210> 2386

<211> 993

<212> DNA

<213> B.fragilis

<400> 2386

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cgtgacggta	aaaaagccaa	agcctatgct	aaagagcgga	acataccgaa	gtggtatgac	180
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<210> 2387

<211> 1131

<212> DNA

<213> B.fragilis

<400> 2387

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aaaggaggag	ctgtacgtaa	taattcccgg	gggcataata	ccagttcgta	tggtaattca	1080
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<210> 2388

<211> 978

<212> DNA

<213> B.fragilis

<400> 2388

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<210> 2389

<211> 1236

<212> DNA

<213> B.fragilis

<400> 2389

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<210> 2390

<211> 999

<212> DNA

<213> B.fragilis

<400> 2390

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<210> 2391

<211> 558

<212> DNA

<213> B.fragilis

<400> 2391

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atgccggctt	atggctcctga	gcaacgtggc	ggaacagcca	acgttacagt	cattgtaagt	180
gacgacaaga	tctcttcacc	gatcttgagc	aaatatgata	cagctatcat	tctgaatcag	240
ccttcactgg	aaaagttcga	aagccgtgtg	aaaccgggag	gtatcctgat	ctacgacgga	300
tacggcatta	tcaaccgcc	taccgcgaag	gatatcaagg	tgtaccgcat	cgatgcaatg	360
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<210> 2392

<211> 558

<212> DNA

<213> B.fragilis

<400> 2392

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catgctgacg	gggtaggact	tgccgctcct	cagatcggtt	tgcttattcg	tgtcgttgtt	180
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ataaatgccc	atattgatgt	ggtagagggg	gaggaagtat	ctatggagga	aggttgtctc	300
agtttgccgg	gtattcacga	gtctgtgaag	agaggcagca	agatacacgt	aagatatatg	360
gatgagaatt	ttgtagaaca	taatgaggtg	gtagaaggat	ttctggcacg	ggttatgcaa	420

cacgagtttg	accattttgga	tggaaaaatg	ttcatagacc	atatctctcc	tctgcgtaag	480
caaattgataa	aaggaaaatt	gaacacgatg	ctgaaaggta	aagcacgcag	ttcttataaa	540
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<210> 2393

<211> 939

<212> DNA

<213> B.fragilis

<400> 2393

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<210> 2394

<211> 1131

<212> DNA

<213> B.fragilis

<400> 2394

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aaagtgttcg	gtcttgaatc	atcttggttc	tcggcaccct	acaaagtgtc	ggatgagaaa	1080
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<210> 2395

<211> 408

<212> DNA

<213> B.fragilis

<400> 2395

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ggtgagatgt	atggaccaca	tcagcattta	cgtatcgaaa	taaattatgt	gaaaaagggg	180
agctgcattc	tccatccgga	tcatgagagt	atcacttttc	gtgaaggaga	aattatgatt	240
atcacttcgg	acatcagtc	tctgtttgaa	gccggagcag	atggtagcac	cttgatgcaa	300
ttggaattcc	tacccgaaat	cttttccac	ttcaacttga	atgccacagc	cgattcgaac	360
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<210> 2396

<211> 618

<212> DNA

<213> B.fragilis

<400> 2396

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<210> 2397

<211> 2697

<212> DNA

<213> B.fragilis

<400> 2397

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ctggcagact	ccggacgaga	cgtctattcc	atgaatcctg	catggcgctt	ttataaagga	180
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<210> 2398

<211> 1257

<212> DNA

<213> B.fragilis

<400> 2398

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<210> 2399

<211> 762

<212> DNA

<213> B.fragilis

<400> 2399

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<210> 2400

<211> 222

<212> DNA

<213> B.fragilis

<400> 2400

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gcagagattc	ttcgcaaaaa	aggtatcaag	ctgaatcgta	acgaaatgga	aaacctcggt	180
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<210> 2401

<211> 417

<212> DNA

<213> B.fragilis

<400> 2401

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<210> 2402

<211> 1173

<212> DNA

<213> B.fragilis

<400> 2402

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 <212> DNA
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<400> 2403
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<210> 2405
 <211> 774
 <212> DNA
 <213> B.fragilis

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<210> 2406
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 <212> DNA
 <213> B.fragilis

<400> 2406

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<211> 252

<212> DNA

<213> B.fragilis

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<210> 2408

<211> 852

<212> DNA

<213> B.fragilis

<400> 2408

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<210> 2409

<211> 567

<212> DNA

<213> B.fragilis

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<210> 2410

<211> 201

<212> DNA

<213> B.fragilis

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<210> 2411

<211> 2229

<212> DNA

<213> B.fragilis

<400> 2411

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<210> 2414
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 <212> DNA
 <213> B.fragilis

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<211> 441

<212> DNA

<213> B.fragilis

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<210> 2416

<211> 1818

<212> DNA

<213> B.fragilis

<400> 2416

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<211> 432

<212> DNA

<213> B.fragilis

<400> 2417

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<210> 2418

<211> 873

<212> DNA

<213> B.fragilis

<400> 2418

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<211> 969

<212> DNA

<213> B.fragilis

<400> 2419

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<211> 426

<212> DNA

<213> B.fragilis

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<210> 2422

<211> 363

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<210> 2424

<211> 219

<212> DNA

<213> B.fragilis

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gggcacaatg	acattaagac	aacaagtata	tatcttcattg	taacgagtgc	ccataaatcg	180
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<211> 843

<212> DNA

<213> B.fragilis

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<211> 981

<212> DNA

<213> B.fragilis

<400> 2426

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gatatgcgta ctgtttctgc attccagttt attgctcttt acatgcctaa agacagtaat 960
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<212> DNA
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<211> 882
<212> DNA
<213> B.fragilis

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<212> DNA
<213> B.fragilis

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<213> B.fragilis

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<211> 708

<212> DNA

<213> B.fragilis

<400> 2431

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gaaatatatc	caggggaagaa	ggtgaccctt	tgtcttaaaa	catcaggata	tggtgaagga	600
gaacaagctg	acatcaaaat	caagatggaa	gacgggaaag	aaaagaccgc	ttcgggcgag	660
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<210> 2432

<211> 756

<212> DNA

<213> B.fragilis

<400> 2432

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gacagcatat	ggaacgcatt	tgcagactgg	cagtatgccg	tcattccgca	agctccggac	180
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caattaatcc	gcaccacccc	ctaccctata	ctggtttg	gtgacttta	ctctctccca	540
tcgtcctaca	catacagtac	cgtgaaaggt	gacaatcttc	aagacggatt	ccagacttgc	600
ggacatgggt	acatgtatac	gttccggtag	tttaaacgcc	tgctgagaat	cgactatatt	660

ttccattcca	aagaatttaa	aggggtagat	tactattcgc	ctgacctoga	tttgtgcagt	720
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<210> 2433

<211> 2487

<212> DNA

<213> B.fragilis

<400> 2433

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cacaaagagg	taggtctgcg	ttcgtttgtc	gaatcgttgg	gtaaggacgc	cgattacttg	180
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atgattgttg	cagggacatt	ggcggcaggt	aatacggttg	ttgtcgatgt	ggcggataat	2460
ggagatattg	attggaatgt	gaaatga				2487

<210> 2434

<211> 231

<212> DNA

<213> B.fragilis

<400> 2434

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caggatgggg	ccgatgatca	gcgcatagag	ccccggctccg	cacagggctg	ccacgacggc	120
agccgtttccg	gtggctatct	gtatgacgaa	actccgcagg	gcgatgaact	taaactcttt	180
attgcggtag	aacagcgc	tgggaacgat	ggtggcggaa	gcaaaaaata	g	231

<210> 2435

<211> 489

<212> DNA

<213> B.fragilis

<400> 2435

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tttggaatat	atgggtgtat	ggaagatagt	tttttaggta	tgcttatggt	tatagatatg	180
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ggagatgaac	gaggattgaa	tatgcttgca	gtcttatgcg	gtatgatcta	tccgcttatt	420
gggattgggt	gtttattcac	tggattgaga	tttataaata	agtttagtaac	aacgaaagat	480
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<210> 2436

<211> 264

<212> DNA

<213> B.fragilis

<400> 2436

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ctattgaata	tactatcatt	tcgcattgat	aatgtgcaaa	ttttctcact	aatagtttat	180
atgattttca	aattgatgat	gatggtttcc	cgggttcgtga	gggttcgggt	gtatgtgtct	240
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<210> 2437

<211> 1260

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1201)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2437

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ttcaacacgg	acacagccaa	gcaagacagc	acccctgccc	tttcgaaacg	tgaactgcgg	180
cgtcagcggg	tagcccggcg	caaccttcac	tacaatatcc	tcggagggcc	cagctacacc	240
cccgaacttcg	gcctgctgat	tggcggaagt	gctttgatga	cttttcgtat	gaacccgagc	300
gacaccaccc	agcaacgctc	cgtggtacct	gtagccatcg	cactgatgtt	caacggcgga	360
ctcaatttgt	tctccaagcc	gcaactatcc	tttaaaggcg	accgcttccg	catcttcgga	420
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gattatgtgc	gcagcgacac	caccagccag	taccgatata	gtggattaca	gatcaacccc	540
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gcttgggcgg	gatgcggatt	catggggccct	aacccgggaa	aaatagaagg	tgtcctgcct	1140
aacatgggtg	tgggtctccg	cattgaagtg	cagccccgca	tgaacgtccg	cctcgacctg	1200
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<210> 2438

<211> 882

<212> DNA

<213> B.fragilis

<400> 2438

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tggaacaacg	aaacctata	ttttatccgc	actaatccgg	aacaattatg	ggcgattccc	180
aaatatcagc	aaataccttt	tccatatttt	caaaggaaag	atgcaatcat	tgagaccaa	240
acattgcata	cgtcccatgt	cttgtcaaaa	gatgaactgt	tgaatttggg	ttacgatgcc	300
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gacattttac	tgtttgcagc	cggaaaaaca	aaattaagtc	cctatatgac	tgatcataag	660
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agcgattaca	aaaaaacact	aataaaatat	cgagaattac	aaaaaaaatt	tgaagtggga	780
gacaaatctg	tagaggaaaa	gatgaatgaa	tgtcacaaaa	tactgaattc	acattatata	840
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<210> 2439

<211> 1755

<212> DNA

<213> B.fragilis

<400> 2439

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caacctaaac	agaatgtact	aaaagacatt	tatctttctt	tcttctatgg	agcgaagatt	180
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ttcaattttc	ccggagccga	ccaggaaaaa	ctttgtgggtg	tgcttttcggg	tgagagagcg	1440
aatcgtctgc	atctggctat	ggcactgaag	gaagaaggaa	atgtgtttgt	gctcgacgag	1500

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<210> 2440
 <211> 921
 <212> DNA
 <213> B.fragilis

<400> 2440						
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<210> 2441
 <211> 459
 <212> DNA
 <213> B.fragilis

<400> 2441						
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aactacgatt	cgcggtgtta	aaaagggtgtg	gtgactatca	ttgtgataga	agccaaagag	420
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<210> 2442
 <211> 1170
 <212> DNA
 <213> B.fragilis

<400> 2442						
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cgcgatagca	tagaagtacg	aaccaacagt	tataactacg	ggttgctgcc	cgcccgacaa	180
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ctggagaatt	acagcaaaat	tatcatagcc	aaaatacata	acagggataa	tcgcggcgaa	720
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<210> 2443

<211> 1227

<212> DNA

<213> B.fragilis

<400> 2443

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<210> 2444

<211> 459

<212> DNA

<213> B.fragilis

<400> 2444

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gacactctta	tccccaagcc	tacattttgg	gatcaatggg	gtggtagcat	ccttttctac	360
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<210> 2445

<211> 453

<212> DNA

<213> B.fragilis

<400> 2445

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gtaaacctac	aagaagtcgt	caggggaagaa	gttctggata	accggatgat	acgtaagcgg	360
gtagatatta	cagtactcgc	cacattgaat	tccaccggtg	ctccctgcgg	tttcggttac	420
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<210> 2446

<211> 399

<212> DNA

<213> B.fragilis

<400> 2446

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<210> 2447

<211> 1314

<212> DNA

<213> B.fragilis

<400> 2447

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<210> 2448

<211> 282

<212> DNA

<213> B.fragilis

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attgggtatgg ccgaagtttc cggatatagcc aatgctccca tcgctgcctt cgctgttcct 180
gccgccccct cctccgggag gagaaagggc tacttccgtt acgtccgtat gcggggttggg 240
agacatttgt ggacgaaata caagccaacc gtttctggat ga 282

<210> 2449
<211> 303
<212> DNA
<213> B.fragilis

<400> 2449
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agtatttcca tatatagaca tgcactcttt caagagttcg caaaacactt tgaaatgaaa 180
gatgatttta acatcttcat cctctgctac tataatgtct ttatccatgc tgttatcatt 240
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taa 303

<210> 2450
<211> 1404
<212> DNA
<213> B.fragilis

<400> 2450
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aaagagaaga aaaaaagaga ttga 1404

<210> 2451
<211> 450
<212> DNA
<213> B.fragilis

<400> 2451
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<210> 2452

<211> 810

<212> DNA

<213> B.fragilis

<400> 2452

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<210> 2453

<211> 1899

<212> DNA

<213> B.fragilis

<400> 2453

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<210> 2454

<211> 1395

<212> DNA

<213> B.fragilis

<400> 2454

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<210> 2455

<211> 2406

<212> DNA

<213> B.fragilis

<400> 2455

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<210> 2456

<211> 465

<212> DNA

<213> B.fragilis

<400> 2456

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<210> 2457

<211> 2805

<212> DNA

<213> B.fragilis

<400> 2457

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<210> 2458

<211> 255

<212> DNA

<213> B.fragilis

<400> 2458

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gcttactgca	tttttgtttc	atgcaggctt	aactattggg	tgagttattc	caattatctt	180
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<210> 2459

<211> 219

<212> DNA

<213> B.fragilis

<400> 2459

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aaactagcgg	aaatcataac	ctataacatc	tcctttataa	ggggcaactc	gaaaggaaga	180

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219

<210> 2460

<211> 1488

<212> DNA

<213> B.fragilis

<400> 2460

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<210> 2461

<211> 789

<212> DNA

<213> B.fragilis

<400> 2461

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aagaagtga						789

<210> 2462

<211> 183

<212> DNA

<213> B.fragilis

<400> 2462

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<210> 2463

<211> 2316

<212> DNA

<213> B.fragilis

<400> 2463

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<210> 2464

<211> 966

<212> DNA

<213> B.fragilis

<400> 2464

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<210> 2465

<211> 924

<212> DNA

<213> B.fragilis

<400> 2465

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<210> 2466

<211> 477

<212> DNA

<213> B.fragilis

<400> 2466

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ttaactattg	gttgagctat	tccaattatc	tttttatctt	gttgtggggg	tcattgtgata	300
agtacagaag	ctataactct	gtgggaagta	ttaagctatc	tttttagcat	tttcattatg	360
tctttctatt	ttgtgggaat	ttttactttt	ggacaatgct	tgctaacagc	gagcataaca	420
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<210> 2467

<211> 321

<212> DNA

<213> B.fragilis

<400> 2467

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aggctgacag	cagtcaatga	tagtatagac	tggactgttt	tattcatcgc	acaattgtta	180
gtaatggttc	agcagggaac	ggcttgcggt	tatcttgcgt	tattagtgat	attgttactt	240
atattcaatt	tccatattat	tatctttgtt	atgctcgctg	ttagcaagca	ttgtccaaaa	300
gtaaaaattc	ccacaaaata	g				321

<210> 2468

<211> 195

<212> DNA

<213> B.fragilis

<400> 2468

gataatacaa	tgccatatat	tactattgaa	gggggggtcac	tcacccgtga	acaaaaaagt	60
gaattaatcc	gaaaagtgac	agaagtagct	tcggaagtca	tgcaaattcc	tatggaattc	120
tttttatgta	cgggtcaaaga	attaccagat	gaaaatatag	gaataggagg	tcggaccatt	180
gacttgatta	aataa					195

<210> 2469

<211> 864

<212> DNA

<213> B.fragilis

<400> 2469

caaatgaaaa	taatggagat	taaatatata	ttttgtatcg	tcttttgttt	ttgggcaatg	60
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attcaagata	cactatctat	actacggcaa	aattatccct	atacagatga	taattactgc	180
gattctttac	aacatagatt	ctctatcctg	ctggaagaac	tttgtgcagt	cgataaagaa	240
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gtagacgagg	atatgagggt	attttcccga	aacacttatt	tcggtgggtc	gatgccattg	360
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gataatgata	tgggaatatg	ttatgatata	atttattcca	ttcaggcatt	gaataaaaga	480
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gctgttagtt	gtgcaaacgg	agagttgaag	aaagaaataa	tatttgtttc	cggtaatcag	600
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ttcattagtgc	gcaatttaac	gttcccccg	attgtatatg	ttgaaacaca	agaggaaata	720
ttaaagcctg	ttaccgtgag	agataaagac	gatatacaat	atatcggtgg	agaaattgac	780
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<210> 2470

<211> 198

<212> DNA

<213> B.fragilis

<400> 2470

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agcgaagttg	acggtaaagc	tgagcgtgat	gcatgtggct	acagcttcga	gcgtgccgaa	180
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<210> 2471

<211> 336

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (310), (312), (315), (320), (328), (333)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2471

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gaatccaaaa	cgcaagaata	cgataagatt	tacgccagac	agattgccct	ggtggataag	240
gtggattcgc	tgtataacta	cctggtgctg	atggtcttca	ccacggggct	ggaaagagcc	300
gctgcaattn	cnaanagecn	ctctattncc	aanccc			336

<210> 2472

<211> 315

<212> DNA

<213> B.fragilis

<400> 2472

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agtatcataa	gtcttaagt	aggttatggg	tcgatataat	tgtgtaaatc	ggttcaactg	180
tggttcacca	cagattacac	agaggatcat	ttcggcagag	tcttacagaa	tcctatagaa	240
tctcagagaa	ttccacagga	tttcactttc	tcgtttatgg	atatcccca	agaaaatgat	300
tcctctctgt	gttaa					315

<210> 2473

<211> 3747

<212> DNA

<213> B.fragilis

<400> 2473

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gtgctggcac	gtctgatttc	accggacgac	ttcggcgtga	tgcccgtagc	cacggtaatc	180
atcgcttttt	tcaacttggt	tactgacgtg	ggactgtctc	ccgccatcat	ccagcacaag	240
acactgaccg	gagaaaaatc	gtctggcctc	ttctccttca	ccgtctggac	aggcattggg	300
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aagctagccg	agaaaatagg	atacctgatc	agccatgaga	atatccgcaa	agagatggga	3660
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<210> 2474

<211> 213

<212> DNA

<213> B.fragilis

<400> 2474

tacgaagaag	tgaataatgc	catcgagaaa	atagggcaag	agatgtatcg	tgagactgag	60
tttctggaaa	aagcaatggc	tatctattta	ttggataata	cttcttttgg	agagcacgga	120
ttcgatttgg	ctaattccga	gctaattgaa	gaggcgatta	atgacgggag	aattaaacca	180
ttcccgagag	cgactagaaa	aacaaaagat	taa			213

<210> 2475

<211> 1467

<212> DNA

<213> B.fragilis

<400> 2475

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aaacaagttc	tcaatctgga	tgacttggat	tatggcattg	acgtagtccg	ctattatgct	180
ccggctatgg	aagagagcaa	agacactgta	gaagagcatt	attacgtaaa	cagagatagc	240
gtgaagtttt	atgatacggg	aacggacaaa	cttcttccgg	tcttgattgc	ataccgccat	300

cttgccgggag	tgggtgaagga	acaagccact	ttctgtggac	atagctttac	aaatgtgagc	360
atggctacaa	tggaagacgg	acatttgata	atgggtgcagt	gcgaagtcga	gatgcagcca	420
gccgacctct	cccaactact	ggcagcagcc	gtcaagaaat	acggagagcc	ttacacggaa	480
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atccaactga	acgctaaaaa	tatgagcggg	aaggaaacac	taaacataga	aacgacggac	600
aatgtggaag	aacctgtcaa	aataggaaat	cggaaaccct	atgtgaaagt	tgccctatac	660
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aaagtaacag	acgaaaccgg	tataacagat	tccgtaaaaa	tcaaccaaga	gggttgccct	960
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<210> 2476

<211> 360

<212> DNA

<213> B.fragilis

<400> 2476

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tccgcactct	ttcagcgctt	ttacctgata	gcggattttc	ttgctgatgc	cgttcgcttc	180
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tttgcccttg	ccagtgatgt	cgtattcacc	ggtcaactgt	atatagcacc	caaataataca	300
gaaaaatata	atgctttttta	caatcagggt	cagaaaaatg	ttgcctcctt	ctgtcattag	360

<210> 2477

<211> 393

<212> DNA

<213> B.fragilis

<400> 2477

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ggacaaattc	gtctgcatgt	ggaatcgact	gatgatactt	ccattctgga	gaacatgacc	180
aatcagttta	aacctcattc	cggcagcatc	gtcttcaaaa	aaggagatga	agaagccaag	240
atgaagggaac	ttacctggga	aaacggatac	attaccgaat	ttaccgaaaa	catcgacatt	300
gtcggctcgc	agccgatgac	tatcactttt	gtcgtatcgg	ctcaggtaat	caagattggt	360
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<210> 2478

<211> 1836

<212> DNA

<213> B.fragilis

<400> 2478

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cgactgctga	ttgaagcctt	gtcgggcaaa	attttcaagc	tgtccggtga	tatgcacgcc	180
attgaaaagg	gattgtttgga	gaaagtcgct	tccgccctta	ctccacacac	ggcattgggt	240
gccaaacccg	cccatgctat	tgctgctgcc	cgaccatata	caccgcaagc	tactgtatct	300

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cccacagacc tgttttctta taaaagcacg gagatagtga agaagtataa gatgaaaaat 360
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<210> 2479

<211> 552

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (319)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2479

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ttgatagcca tagctgcaa ctggcaatat ctgggtcgga tcttccaact tcttttacgg 300
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acgaagcagt cgggatattc gtgcaaggag attgcggctt atatgaaaga gcaccgggtg 420
gacattatct gctttcagga gtttgtcggg caaccggtag ttttacttca gacagcatac 480
ggaacgcatt tgcagactgg cagtatgccg tcattccgca agctccggac agcacaccta 540
tcttgcaggt ag 552

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<210> 2480

<211> 996

<212> DNA

<213> B.fragilis

<400> 2480

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tatattaata tttataatga aaacaacagg attctaactg cacaaggtag tgaatatgac 180
tatctctatt ttggagacaa taaagataaa gagatcttgg cgaatgtaaa taattttaca 240

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<211> 303

<212> DNA

<213> B.fragilis

<400> 2481

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<211> 192

<212> DNA

<213> B.fragilis

<400> 2482

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<211> 189

<212> DNA

<213> B.fragilis

<400> 2483

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<211> 2004

<212> DNA

<213> B.fragilis

<400> 2484

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<211> 246

<212> DNA

<213> B.fragilis

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<213> B.fragilis

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636

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<212> DNA
<213> B.fragilis

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<212> DNA
<213> B.fragilis

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<212> DNA
<213> B.fragilis

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<210> 2498
 <211> 1470
 <212> DNA
 <213> B.fragilis

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 cgtgaaagag cttacgttga acttcgcgga caaaataaat atgcttcttt actcgatacc 720
 tgccagatag catccatctt tttctataat aaggggcgagg tcaatctttc tgtatgtgtc 780
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 gggctgggtc atgccaaagg ctctttggct aattatgatt atacacacat caacttccgg 1380
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<210> 2499
 <211> 642
 <212> DNA
 <213> B.fragilis

<400> 2499
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 gttgcctcgc tgaaagtgga gaaacgtaca aagaatcata ttctgatgac cgggtggtgcc 180
 gactataaga tcagtgccgg gccggacgat tccatgtgca aatacctgaa gtcccgtgtg 240
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 tttcgtttcg gaggttggtg tgctcccggc ctacgcattg gagaccatat ttattttagt 360
 gccattcctt taggttccgt agctgccggc agcgatgcca cgatggatgt gatgctgggt 420
 ggtcaattcg gcgatgcgat tgctgcttcc gctttaatat ccaaacgggt atattatgaa 480
 atagatcctg aaaccaataa ggtaggattt gtcggaaaag agcggatgga agaactgctt 540
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 accgataaat atctgcgact gctgaaggcg gaagagaagt ag 642

<210> 2500
 <211> 930
 <212> DNA
 <213> B.fragilis

<400> 2500
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aaattggccg	atgtgacagc	acgcccggta	gaacagatac	aggaatacac	ggcaaccgta	180
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gtggaagtgg	gcgatcatgt	gtccaaaggc	cagaaactag	tgcatatgga	tgctgccaac	300
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ctgtataagg	taggtgggtgc	ttcaaaatcg	gaatgggatg	ctgcaaagat	ggcctatgac	420
gtgaagaaaa	ctgcttatca	gaacttggtg	gaaaatactt	ctctgctgag	tcctatcagt	480
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ctgaccgttg	aaaagattac	tccgggtcaaa	cttttgatca	atgtatccga	ggtttacttc	600
accaaggtga	agaaaggtgc	tcccgatgaat	gtgaagctcg	atgtctacgg	tgatgaggct	660
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gtggagattc	aattgcctaa	ccagaatcag	aaagtacgtc	cgggaatggt	tgcccgtgcc	780
agcctgaatt	ttggtacgga	agagaacgtc	gttggtcccc	atttggctat	tgtgaagcaa	840
gctggtgccc	ggcgaccgtt	atgtgtatgt	atacaaggat	ggaaaagtga	catacaacaa	900
agtggaaactg	ggacgtcgca	tgggggctga				930

<210> 2501

<211> 1362

<212> DNA

<213> B.fragilis

<400> 2501

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cttgacaaag	cactggaaat	tgcattgagc	gaaaacccca	caatgaaagt	ggccggccaa	180
gagattcagc	tgaaaaaaga	ggctaagaag	gaggcatacg	gcggactatt	tccggagggtt	240
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ggagaatcgc	aaaccatcca	ggtagggttcg	gacaactcgt	ataacggagg	actcaatgtg	360
agtctccctg	tatttgctcc	gacgctttac	aagagtatca	atctgaccaa	gacagatgtg	420
gaactggctg	ttgaaaaagc	acgctcgtcg	aaactagact	tggatgaatca	ggtgaccaag	480
gcatattatc	agttgttggt	ggcccaggac	agctacaaag	tgtctctgca	gagttatgcg	540
caggcagaag	ccaactatga	agtggtgaaa	gccaaatatg	agcagggaac	ggttagtgag	600
tatgataaga	tacgcgcgca	cgtacagggtg	cgtagcctga	aacctcgggt	agtatctgcc	660
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gtggaaattg	ctgccgatgg	taatctgaag	gactatgaaa	tggatgatgtt	ccgtcgtcag	780
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ctgacacagg	cccagttgac	ttacaaccag	tctatctacg	actatttggt	tgctaaggct	1320
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<210> 2502

<211> 480

<212> DNA

<213> B.fragilis

<400> 2502

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gcggcctcga	gtgattcaat	agtctcttcc	aacggtcagg	aagatcatgt	tagcatggga	240
gccaatgccg	ctaccaaact	tttccggatc	atggataatc	tggagcatat	ccttgccatc	300
gagttgatga	atgctgcgca	gggaattgag	tttctcgtc	cggcaaaaac	ttctcccatc	360
cttgagcgct	atctggctgc	atatcgtaaa	gaggttccgt	ttgtaaagga	tgatatcggtg	420
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<210> 2503
 <211> 1578
 <212> DNA
 <213> B.fragilis

<400> 2503

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ctgttgagg	ctttcaaata	taatccggat	gcgccgatga	tattcagcag	cgggaattttt	180
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cggattctgt	ttgttgctct	ttctcctat	tatttttatt	acaagagtag	tggaaacctat	300
tttttcctgt	tggctatcgt	tactgttacc	gattttatga	tagcctggct	gatggatcga	360
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atctattttc	agtttctag					1578

<210> 2504
 <211> 192
 <212> DNA
 <213> B.fragilis

<400> 2504

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aacaaagtgg	aactgggacg	tcgcatgggg	gctgaatatg	aattgaaatc	cgggtgtacc	120
aataattctc	aggtatgcat	tgccgggtcag	acccgattga	tcaacggcac	tgaggtagag	180
gtagaaaaat	aa					192

<210> 2505
 <211> 594
 <212> DNA
 <213> B.fragilis

<400> 2505

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gttattgcgg	aagaggatgc	agaaaacata	gtgcaagata	ccttccttta	tctatgggaa	180
catctggagt	tattggaaga	tatagaccat	ctggatgcct	ttctttttac	tcttatcaaa	240
aacagatgtc	tgaactttct	gaaacatcag	tcgtatatcc	aggccaaaac	ctgttcgctc	300
aaagcagacg	aagaactgga	gtctcaattg	aacctatatg	ctttggaaca	atttgacgaa	360
gctgtttcct	ctatttcgga	agtagaaaac	ctgttgagcc	gaacgatgca	aaagctgccc	420

gaacgttgca	gagaaatctt	tttgctcagt	cgcatagaag	gattaaaata	taaagaaata	480
gccgaacgcc	tggtatatatc	cgtaaacacc	gttgaaaatc	agatatccat	cgacttctgc	540
aaactcagat	cagaactcaa	agaatatctt	cctttactgg	tttttatcat	ttaa	594

<210> 2506
 <211> 234
 <212> DNA
 <213> B.fragilis

<400> 2506	
cagaagggtta	aatcaagtaa
gaaggaaata	gagaaaaaag
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ctgggaaaaag	ggggaagag
gcaggggaatt	ttaaaaagca
cacaggacat	tgcttaaaaa
	ctaa
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	234

<210> 2507
 <211> 2436
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (2269)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2507	
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agcctgactt	tcggcgaatt
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gtaaaggaaa	tcctgacaac
aactacatth	ctctttacgt
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caggaaatac	ctgtgaatgg
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tcggcttcta	cactaaaagt
tcactcggcg	gacgcgtcag
gacgatccga	ccatcatcat
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cgctttatga	acgatgcatg
tatggcattt	atactgaaga
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agtctgacag	caagcggcgg
aagcaggatg	ccctctatgg
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gacatggctt	atcgtcagga
aacaatatgc	accgtaaccc
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ctgtccgtgt	tctttatatt
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agactaatta	tctgttcatg
taaaaaacac	cagtgtctacg
tgacgtataa	attctctaata
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tcacggacat	agaaggaaac
cgtatatcgg	atatctgact
agatgaaaga	agatactaaa
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caacatccgg	cttcaaccga
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gcagtacttc	ggatgtattc
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aatatgacgg	acattcacct
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aattgggagc	attattcgtg
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	1920
	1980

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<210> 2508

<211> 1041

<212> DNA

<213> B.fragilis

<400> 2508

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gaaaaaacag	aatttctgaa	taaactccga	gataatccgg	aagctaaaaa	agaattcgca	180
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gagaaagtct	atctgaaccc	acacgaaaaa	gtatcgttag	taaacacacc	tatggtagtg	780
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accggagacg	tgaactgga	cgaacgaatc	tcaggcaaaa	tccgacaaag	cgaagatgtg	960
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<210> 2509

<211> 1146

<212> DNA

<213> B.fragilis

<400> 2509

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1146

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<211> 504

<212> DNA

<213> B.fragilis

<400> 2510

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<210> 2511

<211> 285

<212> DNA

<213> B.fragilis

<400> 2511

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<211> 330

<212> DNA

<213> B.fragilis

<400> 2512

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<210> 2513

<211> 1296

<212> DNA

<213> B.fragilis

<400> 2513

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<210> 2514

<211> 741

<212> DNA

<213> B.fragilis

<400> 2514

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<211> 198

<212> DNA

<213> B.fragilis

<400> 2515

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<210> 2516

<211> 207

<212> DNA

<213> B.fragilis

<400> 2516

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<210> 2517

<211> 1845

<212> DNA

<213> B.fragilis

<400> 2517

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<211> 867

<212> DNA

<213> B.fragilis

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<210> 2519

<211> 1593

<212> DNA

<213> B.fragilis

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<211> 1356

<212> DNA

<213> B.fragilis

<400> 2520

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1356

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<212> DNA

<213> B.fragilis

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<211> 1226

<212> DNA

<213> B.fragilis

<400> 2522

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<210> 2523

<211> 762

<212> DNA

<213> B.fragilis

<400> 2523

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cccggtagag	atttgtttat	gattagtaca	gtaacgggat	ttagatttct	tcgtcttgaa	480

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agcaaacagt	gcttactcta	tcctcctttt	agtataaag	aagacttgat	tatttcacgc	720
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<210> 2524

<211> 738

<212> DNA

<213> B. fragilis

<400> 2524

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<210> 2525

<211> 3360

<212> DNA

<213> B. fragilis

<400> 2525

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<210> 2526

<211> 918

<212> DNA

<213> B.fragilis

<400> 2526

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<210> 2527

<211> 972

<212> DNA

<213> B.fragilis

<400> 2527

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gtacgcagca	tgggtgccaa	aggcagcagc	cccagactt	acgacccac	cccgagcaa	300
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<210> 2528

<211> 732

<212> DNA

<213> B.fragilis

<400> 2528

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<210> 2529

<211> 879

<212> DNA

<213> B.fragilis

<400> 2529

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<210> 2530
 <211> 432
 <212> DNA
 <213> B.fragilis

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 gaaatcgccct atattttctg ttccggacgaa aaaatatggg aagtgaaccg ccaatatctt 180
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 gataaggggtc ctggagaacg tgaaattatg gaagctgcag agaataaggc actagctatg 420
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<210> 2531
 <211> 363
 <212> DNA
 <213> B.fragilis

<400> 2531
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 gatctgattc cgggtggagc tacctaccgt tctgccgaga atatatccgg cctgcaatgg 180
 tggggtgacc aatgtatcaa accgggaata gaagcagtgt tcatgataaa ccctaaaaac 240
 ggaaaagaaa caccgctcac caccgcgaac atagtaaaca aggcgttggg agccggaaat 300
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<210> 2532
 <211> 1230
 <212> DNA
 <213> B.fragilis

<400> 2532
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 agagccgaag acttgatatg tcaattcagt gagagaatag ataaggagaa aggtgggtacg 180
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 aaaatagcta caagaactgg tgagataagt acggatagtg tgaatatgtt catattttgat 300
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<210> 2533

<211> 1218
 <212> DNA
 <213> B.fragilis

<400> 2533

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<210> 2534
 <211> 423
 <212> DNA
 <213> B.fragilis

<400> 2534

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ctgggttcgct	atacgtacga	aggcaaaaacc	attaccacaa	actattataa	atggaataac	360
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<210> 2535
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 <212> DNA
 <213> B.fragilis

<400> 2535

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gcaaccccg	aagcagctta	tgtaatgtgc	caagctatca	aagagtacta	cgaacagaca	720
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<210> 2536

<211> 1884

<212> DNA

<213> B.fragilis

<400> 2536

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cacctgaaa	cgggacatgt	agcctatacc	ataggcaaca	atctgtatgt	ggacgatcgg	240
gccgtaacca	acgaaccgga	aggtatcgta	tgccggccagt	ctgttcacgc	caacgaattc	300
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<210> 2537

<211> 399

<212> DNA

<213> B.fragilis

<400> 2537

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ggagaggatg	taatggctat	tatgaaagat	agacataagg	tacatttgat	tactcataag	180
gaggcaaatc	tcagagagaag	tactctactt	gttgcttctg	gttatattga	agagagccaa	240
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acagggcaga	ctgttttttga	tgatactata	acaggtaact	ctttctctat	cttttttgaa	360
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<210> 2538
 <211> 456
 <212> DNA
 <213> B.fragilis

<400> 2538
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 acattagaag aagcacagaa agccgttgat gaatggatac acaaatacgg tgtacgttat 180
 ttcagcgaat tgaccaacat ggcagttctc accgaagaag taggcgaact ggcacgtatc 240
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 gagataacgg acgtactctg ggtactcctt tgcacgcaa accagaccgg ggtaaacctc 360
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 aataatccaa aactgagtga acatggaaat gaatga 456

<210> 2539
 <211> 1134
 <212> DNA
 <213> B.fragilis

<400> 2539
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 gccgtgtccc agcagctcga tccggcagtt gaagttccgt tccagccatt cgggtgtgac 180
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 aataagcagt tgcgggtcgc tgatgatggc tctgccagc agggcgcggt gcagttgtcc 420
 gccgtcagc tgtccgatgg cccgggtgttc aagtccctcg agtcccatgc ggtggatcac 480
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<210> 2540
 <211> 915
 <212> DNA
 <213> B.fragilis

<400> 2540
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 caaaagaatg tacaaacgtaa cgaatgagcg aatccctaata tacaaaacat cgaatatctc 240
 aaaaaaatgt ttcggcaaaa agctgtcgac gaaatatccg aaaatatagt ttatccattg 300
 aagagaacat cccctatacc gagtgttgag aatgcagagg aattgaaaga aagattcgat 360
 tcaatcttcg atgaagactt aatccgtatt attacgagtt cggatattga tcaatggtcg 420
 gaaatgggat ggagaggaat aatgctggac gatggcatac tttggatgga ttacgacgga 480
 aaaattacag ccgtgaatta tcaaagcaaa tacgagaaaa agcttgccaa gaagcttacc 540
 tccaaagtaa aaggtgacct atcctcggat ttgcgacata acttcaaagg ggaagtatat 600
 aaattttaaga caaaaaatta ttttataagg atagatgaac tgaaaaacgg catgtaccgg 660
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ggaaaaatag	aatttagtgg	aagtggagga	aatcacgtga	ttacatttaa	aaataatatc	780
tatgaataca	aggtgttcca	taataaaaata	gccgcgtcgg	ggatcgcgga	catcactctt	840
gttgtagaga	aaaatggcaa	agaaatactc	tcggaagatg	ggaaattgga	agacgacatc	900
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<210> 2541

<211> 1635

<212> DNA

<213> B.fragilis

<400> 2541

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ggggatactg	cgcagcaggt	aattcctatc	catatcagtc	tgacagggtga	caacgactat	180
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ctcagccaca	accttcgggt	gagtttcaat	cagaagttgt	gcaaactgac	aattaccatc	720
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<210> 2542

<211> 465

<212> DNA

<213> B.fragilis

<400> 2542

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atcgggttgt	tcaatgattt	tcagtgggac	tattatttaa	agcagataga	agtcgctgaa	180
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<210> 2543

<211> 477

<212> DNA

<213> B.fragilis

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 ttgagttgtg cattagggaa agaagtgaac acaggagaat tcggagccga catgaaagta 420
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<210> 2544
 <211> 576
 <212> DNA
 <213> B.fragilis

<400> 2544
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<210> 2545
 <211> 912
 <212> DNA
 <213> B.fragilis

<400> 2545
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<210> 2546
 <211> 1896
 <212> DNA
 <213> B.fragilis

<400> 2546
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<210> 2547

<211> 1365

<212> DNA

<213> B.fragilis

<400> 2547

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1365

<210> 2548

<211> 1701

<212> DNA

<213> B.fragilis

<400> 2548

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<210> 2549

<211> 939

<212> DNA

<213> B.fragilis

<400> 2549

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939

<210> 2550

<211> 723

<212> DNA

<213> B.fragilis

<400> 2550

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<210> 2551

<211> 2040

<212> DNA

<213> B.fragilis

<400> 2551

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<210> 2552
 <211> 624
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 2555

<211> 411

<212> DNA

<213> B.fragilis

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<210> 2556

<211> 3006

<212> DNA

<213> B.fragilis

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<210> 2557

<211> 771

<212> DNA

<213> B.fragilis

<400> 2557

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<210> 2558

<211> 216

<212> DNA

<213> B.fragilis

<400> 2558

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gttacctttg	tagcagattt	cagtactaaa	aagaggttta	gtcataaggg	aacgctgtgc	180
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<210> 2559

<211> 801
 <212> DNA
 <213> B.fragilis

<400> 2559
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<210> 2560
 <211> 1059
 <212> DNA
 <213> B.fragilis

<400> 2560
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 cttaccggac agatgattca taaaaaccgg gccgttcttt atttcacctg gtatctggaa 240
 gattgtgtga ataattccgg tggatggaat aagttcatcc ggttgcacaa gcggttgtac 300
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<210> 2561
 <211> 279
 <212> DNA
 <213> B.fragilis

<400> 2561
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 aaacggttaa tagagtccat gctcgacaag gcagcggatg aatacgatgg gaacgaatcc 180
 taccgctacc tgtctgaaaa ttaccctgat ggaaggttaa tgctgggaaa ggaagaacgt 240
 gaagagttaa tagactgggt gggagtgggt gagaaatga 279

<210> 2562
 <211> 930

<212> DNA

<213> B.fragilis

<400> 2562

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gcaggtgttg	ttcgtcgtgc	agggtgccgag	aacaaaccgg	ctgaactgaa	tgattacgca	180
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<210> 2563

<211> 618

<212> DNA

<213> B.fragilis

<400> 2563

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<210> 2564

<211> 459

<212> DNA

<213> B.fragilis

<400> 2564

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<210> 2565

<211> 2460

<212> DNA

<213> B.fragilis

<400> 2565

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<210> 2566

<211> 1446

<212> DNA

<213> B.fragilis

<400> 2566

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<210> 2567

<211> 285

<212> DNA

<213> B.fragilis

<400> 2567

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ataaaaaaca	aacagtgtta	cttaaaaaac	aaaaagacag	atgcgtcgta	ctttttacca	180
cggagtatca	cagagccttt	ttttgttaat	gatcaacgac	tgaaaatcga	ctccatgtta	240
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<210> 2568

<211> 1005

<212> DNA

<213> B.fragilis

<400> 2568

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attcttgtaa	atgacggttc	tatcgacaat	agtcogtatt	tgtgtgatat	atatcaatct	180
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agctctggaa	catttccaat	gagtgccttg	ctaaaaatta	ttcgaagaaa	ttttttgcta	540
gagaataata	ttactttttca	aaaagggtt	caatcagagg	atatactttg	gtttatggaa	600
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gttttagaaa	atgggattca	aagaatagag	gcatataaat	gggatataca	gactaaaaat	780
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ccatttgcgt	tgagaaaaga	gttggagggc	aagttgtttc	aatataattg	gttacttaaa	900
tataagctaa	atcctaaagt	aaagaaagta	tctttttgta	tgcgtttttt	gggcaaacgt	960
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<210> 2569

<211> 291

<212> DNA

<213> B.fragilis

<400> 2569

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aaagaatatg	tagaagcggc	at ttgccgat	tacaatgata	ttaatgaaga	tacgaggatg	180
caacttgaat	taattaatca	ggcaattgct	gaattgcagg	ccaaagacaa	acaggcaggc	240
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<210> 2570

<211> 357

<212> DNA

<213> B.fragilis

<400> 2570

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tttaaggcag	aagacaagat	accgagccat	tacattaaat	tcattcgtga	tgaggtatat	180
gaatttcgtg	tggcctgtgg	gaacaatgaa	ttacgcctct	tttttatcta	cgacggtgag	240
aacgtagtgg	tattgttcaa	ttgttttagg	aagaagacgc	agaaaacccc	tgataacgaa	300
ataaagaaag	ctataaaactt	aaaaaaagaa	tattatgaag	ctaaaggaaa	taagtaa	357

<210> 2571

<211> 720

<212> DNA

<213> B.fragilis

<400> 2571

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ggtgtcaggc	agatctactg	tgtacctcgg	gtaaagggtg	aaaatgaagg	gaatgctttt	180
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acgaaagtga	tgcgctatgg	tgaatcgttt	tcgatagagg	atgatgatga	tttggcggatg	660
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<210> 2572

<211> 504

<212> DNA

<213> B.fragilis

<400> 2572

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aacatgggaa	atacccttta	cgtagtaatc	gtcaatgaaa	aaagtgaacg	aggacagaaa	180
gtgttggaag	cactggaaga	aaacatagaa	aagatggata	taggctcgca	tagggagctt	240
gtcatcttct	ttttcgtatg	gctgaaccat	cagcagaaag	atcccaaaaa	gagaaaaaac	300
atacgggaac	tggcaaagat	catgcaccgg	tcactgttct	tcggacaaaa	acacaacagc	360
aacgaggaga	tgaagccgga	ttccattgaa	actgagatat	ttaagatact	aaggatatta	420
aaaagcatga	aaaaagcggg	agataaagac	ttgattataa	atctattaga	cgatatcagc	480
ctgtttcttg	atgaaaacgt	ctaa				504

<210> 2573

<211> 558

<212> DNA

<213> B.fragilis

<400> 2573

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acagtgggtg	actttgtaca	ctgcgccagc	atcgacgaac	taaaaaacta	catccccgta	180
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gagatcatcc	gccaaagaagg	cttcagcaac	ataatggcac	tgatttcggg	agagaacgaa	420
gccagcatcc	gcctgttcga	aaaatgcggt	ttcgaatggt	gcgcaaacat	ccggcaggta	480
gcggagaagt	tccggcaaaaa	actggatttg	aggatgtatc	agaaaattat	ttcagacaat	540
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<210> 2574

<211> 183

<212> DNA

<213> B.fragilis

<400> 2574

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aggtataagg	atgaagatac	cggttcaaac	ggcgtaaatt	cacttcctaa	acttgagtta	180
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<210> 2575

<211> 1113

<212> DNA

<213> B.fragilis

<400> 2575

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tataatttgc	acattgtcga	agcattgcgt	aaagagctgg	tcggcattgc	taccgcgaat	180
acggaagagt	atacatctgt	tcttttgcaa	ggaagcggaa	cctattgtgt	agaagccgtg	240
attgggtgctg	ccatcggtaa	gaatgataaa	cttctgattt	gcagtaacgg	tgcttatggt	300
gaccggatgg	ggaatattgc	cgaatattat	catatcgact	acgagctcct	tgcttttgat	360
gaaacggaac	aggtatcggt	agactatgtg	gacgactatc	tgagcaataa	ttcagatggt	420
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aaggccttct	ataccgccct	taaatccaag	gggtttgtaa	tctatcccgg	aaaaatttca	1020
aaagcggata	ctttccgtat	cggtaatatc	ggagatgtac	atccggagga	ctttgcccgt	1080
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<210> 2576

<211> 210

<212> DNA

<213> B.fragilis

<400> 2576

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agtgccaaat	tgtaaatcta	tactaaatct	gctcttgaca	aaaagaaggc	aagaacagag	180
atgttgatc	tttgtttctt	tgtaaaacta				210

<210> 2577
 <211> 1167
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (348), (460)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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 gtgctcgatg cactgactta tgccggaaat cttggaacga ttgccaacga cattgataac 180
 gaacgggtgct tttttgtgaa aggtgacatt tgcgatcgtg aactggccga ccgccttttt 240
 ggtgagtaca agtttgacta tgtagtgaat tttgctgctg aaagccatgt agaccgtagc 300
 attgagaatc cgcaactttt cttgatgacc aatattctgg gaacacanaa cctggttgat 360
 gccgcacgtc gcgcacgggt aaccggtaaa gatgaatacg gatatacctac ctggcgtaaa 420
 ggggtacggt atcatcaggt atctaccgat gaggtttacn gttcgtttgg tgccgaaagc 480
 tattttcatg aaacgactcc actctgtccg catagcccg acagtgcac gaaaaacccat 540
 gccgatatgg tggtaatggc ttatcacgat acctataaga tgccgggtgac tatcactcgc 600
 tgttcaaaca actacgggtc gtatcatttt ccggagaaac tgattccgct gattatcaag 660
 aatattcttg aaggtaagaa acttcctgtg tacggagacg gtagcaatgt gcgcgactgg 720
 ctgtacgtgg aagatcattg caaggctatc gacctggtag ttcgtgaagg tgtggaagga 780
 gaagtataca atgtgggagg acataacgaa aagactaatc ttgagattgt aaaattaaca 840
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 aaagagaaaa atgccgatgg tgaaatttca atcgactgga taaacgaaga ttttaattacg 960
 tttgtcaagg atcgtctggg gcacgaccag cgctacgcca tcgatccgac aaagatcact 1020
 aatgccttgg gttggtatcc cgaaacgaaa tttgaagtgc gcattgtgaa aacaatcgaa 1080
 tggatatctga ataatcagga atgggtggaa gaagtaacca gtggtgatta tcagaaatat 1140
 tacgaacgga tgtatagcaa acgttga 1167

<210> 2578
 <211> 1371
 <212> DNA
 <213> B.fragilis

<400> 2578
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 cgggtagaaa agttttgttt attctttgat ccttggttca cactatttaa atttaagcca 180
 aagaaaagtg agacagaata tgcgtgctgg tggttacctt tggggggata tgtcaaaata 240
 gccggaatga ttgacgaatc gatggatacc gagcaaatga agcaaccgga acagccgtgg 300
 gaatttcggt ctaaacctgc gtggcagcgc ctggttgatta tgggtgggagg tgtgttggtc 360
 aacttccttt tggctctggt catctattca atgattctgt ttaagtgggg agatcaatac 420
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 gcacctgtat atatccctga agatatgatg cagcgtctgt tgggtgacag tgttcgcttt 660
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 gacttcctgg cagctatggc tgaaagaaga caaatgcga aagcgttaca aaatgacagt 840
 atcaatccgc accagatctc attgacttat gtgcgtgacg gaaagaccga tgtattgact 900
 ttgactacgg attcagcttt caaaatagga gtacgggtca atccatatac ggatcaactt 960
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 ggagtgaaga ctttgaaagg ctatgtaggc aacatgaaat atcttttctc aaaagaggga 1080
 gctaaacaat tgggcgggtt cggaaccatc ggaagcatct tccctgcaac ctggaattgg 1140
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cgcaaacgga gtgataaatt tatggaatac gcacaaatgg cgggtaigat tttgttgttc 1320
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<210> 2579

<211> 666

<212> DNA

<213> B.fragilis

<400> 2579

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gacaacaaga	actcttccga	ctccaccatc	gtgaccgaat	acactgacat	agtggatagc	180
agtacggttg	acaccgacta	ccaaagcagc	agtttcgact	tcggcaatga	atttccggtc	240
aacatagaca	aagggggccat	taacggaggc	atactgacag	gattggtagt	tatcatactg	300
atattcggat	tccccttctt	tatcgtattc	atcgcccttct	acttccggta	taaaaaccgg	360
aaagcaaagt	acagactgat	ggaacaggca	ctggcaaccg	gacaacctct	gccggaaggt	420
atcttcaaag	acactctgcc	gcaggactac	cggacgaaag	gtatcaagaa	catctgtacc	480
ggaatcggac	tgttcatctt	cctctgggcc	atcacagacg	aattcagcat	aggatgcac	540
ggattgctgg	tgatgttcac	cgggaatcga	cagtggatca	tctcacgcaa	tcaacagcat	600
gaacggccgg	aagacccttt	cacacgcctt	acacacaaag	acgaaacttt	gaatgaacaa	660
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<210> 2580

<211> 738

<212> DNA

<213> B.fragilis

<400> 2580

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attttttgta	aagaagacct	taaggggcct	tcacatgccg	tttcgttggg	agtatttgtg	180
gatgaagcgt	tgtctttcat	cgatagtcac	gccattcctt	tggtatcggt	agccgtcagt	240
tgtggtcccg	gatcgtatac	cgggcttcgc	attggcggtt	cgatggcaaa	gggtatttgt	300
tacggacgta	atgtcccgtt	gatcgggtatc	ccgacattgg	aagtgttgag	tgtacctgtg	360
ctgctttatc	atgaattgcc	ggaagatgca	ttgctatgtc	cgatgattga	tgcacggcgg	420
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gatcttcac	cgttggcaca	gatgatgttc	ccgcttgacg	aaaagaccgt	tgcaatcaac	660
gactataaag	atgtggccta	ttttgagcct	ttctatctga	aagagtttgt	ggcttcgcaa	720
cccaagaagt	tacttttaa					738

<210> 2581

<211> 918

<212> DNA

<213> B.fragilis

<400> 2581

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cataacctac	gatggctgct	cttacttttt	tcactttttt	attggttttg	tttaacacat	180
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gccattcagg	gtaagagcag	ttgtaaaactc	tatatctacg	aagccatccg	cgaagatgct	480
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gtttcgggta	ttggaggaaa	cacggcccg	atgattcttt	ctgctctttc	accggccgaa	600
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ctgaagaccg	cacagcgtgt	cattgtcgat	ttgaaagata	aaattaaaac	cggtgccatg	720
gctgcaactg	ccgtgggagg	tgctgccggt	gctttgttgc	cggcaatgaa	tgcggaagta	780
caggaagagg	ccatcgctgc	attgaccatg	ctcggatttg	ccgctgcacc	ttcacagaag	840
gcggtgcttg	ccatattgaa	agaagaaccc	gatgctccgg	tggagaaaag	cattaagctg	900
gctttaaaaa	gactttga					918

<210> 2582

<211> 933

<212> DNA

<213> B.fragilis

<400> 2582

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ttgtcactac	tgacagcttg	tggtgacagc	atcgaaaaga	aagcgggtga	aaagcttgcc	180
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aaaaatatcc	gtgtcgagta	tctcggcgaa	cggaaattct	ccactaccat	gactccttcc	780
gaccgtgaag	cactcgtcgg	tacttacgag	ttggccaaat	tactttcatc	catacgtcag	840
attcagcaag	agaaagaaga	agccaacctg	aaaatcgaat	ttgtgaaaag	aaaaatggaa	900
cagaaagccc	aagaagaggc	tgcggaaaaa	taa			933

<210> 2583

<211> 609

<212> DNA

<213> B.fragilis

<400> 2583

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gtcaccccg	acaatccttt	caagaatcag	gctgatttat	ggccggacga	actgcgtctg	180
caactgggtac	agcttgctat	tgagggatat	ccgcgattcc	gggtatccga	tttogaattt	240
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gaaagagaat	tccagttgat	tataggatct	gacaattgga	tggatattga	ccgatggttc	360
gaatcggaac	gtatcgcttc	agaaaataag	atactcgttt	atccccgtcc	gggattctct	420
gtagataagt	cacagttacc	cccgaacgta	cacgtagcag	attctcccat	attcgaaatc	480
agttctacct	tcatcagaga	agccctggct	accggaaaag	atatacgtta	tttccttcat	540
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catacctga						609

<210> 2584

<211> 441

<212> DNA

<213> B.fragilis

<400> 2584

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atgattgcat	atgtcgacca	gttcgggtgtt	ttgcattcag	tgccgcagga	aaggcttgag	180
gaagaagtgg	atgcctctca	tatcgagggt	tctgtaccca	aacaagagga	tgtggaagtg	240
gctcccccta	tgggacgtat	cgagtatttt	aatgccgcga	aaggctatgg	ctttgtgaag	300
gatgcggatt	gtggcgaaaa	gtattttcttc	catatctctt	ctgcccctgc	gacaattgcg	360

gaaggtgata gactgacatt tgaaatagag cgcggtatgc gtggaatgaa cgctgtacga 420
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<210> 2585

<211> 1317

<212> DNA

<213> B.fragilis

<400> 2585

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<210> 2586

<211> 465

<212> DNA

<213> B.fragilis

<400> 2586

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<210> 2587

<211> 633

<212> DNA

<213> B.fragilis

<400> 2587

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<210> 2588

<211> 1425

<212> DNA

<213> B.fragilis

<400> 2588

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<210> 2589

<211> 3099

<212> DNA

<213> B.fragilis

<400> 2589

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<210> 2590

<211> 420

<212> DNA

<213> B.fragilis

<400> 2590

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<210> 2591

<211> 1452

<212> DNA

<213> B.fragilis

<400> 2591

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<210> 2592

<211> 1290

<212> DNA

<213> B.fragilis

<400> 2592

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<210> 2593

<211> 1347

<212> DNA

<213> B.fragilis

<400> 2593

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<210> 2594

<211> 1449

<212> DNA

<213> B.fragilis

<400> 2594

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<210> 2595

<211> 618

<212> DNA

<213> B.fragilis

<400> 2595

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ccacacggca	tacacggtga	attgtcgttc	acctttaccg	acgatatttt	cgatcgggcg	180
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gaccgtgatg	gcatgaatt	gctgattcct	gcacaagaga	aattaattgc	cggtatcgat	540
cagaagcaca	aatcattac	agtcgatttg	cccgaaggtc	tgctgtcttt	ggacgagtgc	600
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<210> 2596

<211> 297

<212> DNA

<213> B.fragilis

<400> 2596

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gaaggtcgtc	ttcaccacag	atttcacaga	tcgacttcca	atgttatcgt	tgatagtcgg	180
tccgataaac	cattgatatt	tgtgcaatct	gtgggtgattt	cgacgcttgt	ttatttatat	240
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<210> 2597

<211> 1215

<212> DNA

<213> B.fragilis

<400> 2597

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aacattgaaa	ccaataataa	agagttgcaa	gccaatgcgc	aattgattgc	ctctcaaaaa	180
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<210> 2598

<211> 531

<212> DNA

<213> B.fragilis

<400> 2598

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aagaaaatga	cagagcaaga	gtgtaaggaa	ttcatgcagg	aagtaaataa	tgcggaagc	480
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<210> 2599

<211> 903

<212> DNA

<213> B.fragilis

<400> 2599

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aatacgagta	tagtgacggg	aacctcgtga	cgtcaagagt	ccatccggaa	actggatgac	840
gaccataaag	gcttggcaga	cttttacatc	tgcgtaccgc	aagacatggg	aaacagttac	900
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<210> 2600

<211> 318

<212> DNA

<213> B.fragilis

<400> 2600

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acaaaagtcg	agttggctct	gctttatgca	ccccatttgt	ctgaaaatgc	cgccctcaat	180
aatctcagcc	gttgatgcg	gcacaacaaa	ctcctgatgg	ctgcgctcga	ggaggtggga	240
tactataaat	accgccattc	atttacgccc	aaggaagttc	gtctgatctt	tcgatatatg	300
ggagaaccgg	gagcataa					318

<210> 2601

<211> 888

<212> DNA

<213> B.fragilis

<400> 2601

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atgatatact	atccgctttc	tacattgatg	cttgccggaa	tacgggaagt	gttggttatt	180
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<210> 2602

<211> 1188

<212> DNA

<213> B.fragilis

<400> 2602

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gaacatacca	tggggcaggt	gtctttctga	cagactccta	cttacgacga	gtatgtggca	1140
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<210> 2603

<211> 879

<212> DNA

<213> B.fragilis

<400> 2603

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<210> 2604
 <211> 327
 <212> DNA
 <213> B.fragilis

<400> 2604
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<210> 2605
 <211> 288
 <212> DNA
 <213> B.fragilis

<400> 2605
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 gaagcagata agaaaacaac tgacggatgt aaacacaaag ctgattgcaa ggctaaagcc 240
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<210> 2606
 <211> 1689
 <212> DNA
 <213> B.fragilis

<400> 2606
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<210> 2607
 <211> 714
 <212> DNA
 <213> B.fragilis

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<210> 2608
 <211> 2106
 <212> DNA
 <213> B.fragilis

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<211> 417

<212> DNA

<213> B.fragilis

<400> 2609

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<210> 2610

<211> 300

<212> DNA

<213> B.fragilis

<400> 2610

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<210> 2611

<211> 1122

<212> DNA

<213> B.fragilis

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<210> 2612

<211> 2868

<212> DNA

<213> B.fragilis

<400> 2612

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<211> 2163

<212> DNA

<213> B.fragilis

<400> 2613

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<211> 2766

<212> DNA

<213> B.fragilis

<400> 2614

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<211> 2103

<212> DNA

<213> B.fragilis

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<210> 2616

<211> 363

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (11)

<223> Identity of nucleotide sequences at the above locations are unknown.

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gcttttgtct	tcagattcat	ctccgtacct	gccaagtgga	tcatgactgc	aaggcaatac	300
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<210> 2617

<211> 1134

<212> DNA

<213> B.fragilis

<400> 2617

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<210> 2618

<211> 1203

<212> DNA

<213> B.fragilis

<400> 2618

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<210> 2619

<211> 1254

<212> DNA

<213> B.fragilis

<400> 2619

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gatcacgaag	gtgacgaaca	cagccggagc	agtgaaccgg	ctaccgggtca	cagtgcagaa	240
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gaagtatttg	aacaagtgat	aaaaacaagc	ggacaagtac	tggccgcaca	aggtgacgaa	360
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 <212> DNA
 <213> B.fragilis

<400> 2620

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 2624
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 <212> DNA
 <213> B.fragilis

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 aactacgaag aggacgtaga aaaggcactt ctcggattag gcttcatgcg cgaagatttc 480

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<211> 1422

<212> DNA

<213> B.fragilis

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<210> 2626

<211> 570

<212> DNA

<213> B.fragilis

<400> 2626

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gacgaaaaat	atttgcaata	tttcgaaact	tgtgatgaaa	tctggcatgc	cggagatatt	180
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<210> 2627

<211> 498

<212> DNA

<213> B.fragilis

<400> 2627

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gatacggaaa	aagaatgtac	ggccaaaaac	ataatggcag	tgaaaataaa	ctttcgtccg	360
tcatcgatgt	tacgtccgaa	cctgacatcg	acccgggccc	gtgataaaat	cgaattcatc	420
gatatacaag	ccgcactgga	aggtaaagaa	tctgaaaaag	gtggagacgg	agacattgtg	480
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<210> 2628

<211> 627

<212> DNA

<213> B.fragilis

<400> 2628

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tgtgccaata	ccattatcaa	tatcatgggt	aatatgtttc	cccatttgag	agatgtaccc	180
gattttcaagc	ataaatttat	ggatcatctg	gctattatgg	cgcactttta	gcttgatatac	240
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cacatgaaga	aagactatat	ggcatggaat	aaagatacgg	tagacgaccg	gaaaatcgcc	480
gaagacctgg	ccgaattctc	gggaggcaaa	ttgcagatgg	atgacgagat	tctgctctg	540
atgtctgaac	gtattgctca	gaactaccgt	ccacgtacga	ataacaacaa	taaccagaga	600
aataataatc	agagaagaaa	attctga				627

<210> 2629

<211> 873

<212> DNA

<213> B.fragilis

<400> 2629

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gctgccatta	tcactttttac	tccttttacgc	aactatttgc	cgggatatat	gaatagtgat	240
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cgtcagaata	tgtatatcat	gaatatacag	gatatcttca	goggcaccgt	gcgggtggat	360
actgtacagt	caatggattc	attgaccacc	atgcgtgaag	attcgtgat	tgcccgttcc	420
gaacgtgaag	aagctttccg	tcgtcaatat	gaagagaccg	aaaaatataa	tctgacctct	480
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tccgatcatt	ttgatgccga	aaagaaacat	tttggaaaccg	atattgccgc	caatcccaac	600
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aatagcggaa	cgctcactac	cggtcgcgat	cttcattttg	aactttggca	cagaggacgg	840
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<210> 2630

<211> 558

<212> DNA

<213> B.fragilis

<400> 2630

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gtcaaatcgc	acctttcaag	ggctaagat	aaattagcta	tttacttaaa	acaaaacggt	540
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<210> 2631

<211> 1026

<212> DNA

<213> B.fragilis

<400> 2631

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gtgattgcta	tgccctgagtt	taaatctatt	ggaagatttt	ttttgtatca	tatttggcat	180
ttatattatg	cattttatatt	atacttgtca	actaaagatg	gcgattgcgt	tatattaatg	240
gagtatcttt	tatctaaatc	attagatcaa	agcctgatcg	cttcattttt	gaagagaaca	300
aaaccaaatg	ttcgtattat	tgctttacca	catttagtaa	gtaagcttat	taaaaaacat	360
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<210> 2632

<211> 906

<212> DNA

<213> B.fragilis

<400> 2632

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gacggaaaa	tcaattggat	accggcattg	atctgctgtt	tgctcgccgg	actgatgcag	180
gttgccgcc	atttcatcaa	cgattttatt	gactttctaa	aagggaaccg	ccgcgaagat	240

cgtctcggac	cggaacgtgc	ctgtgcacaa	ggctggattt	cggcagccgc	gatgaaacaa	300
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<210> 2633

<211> 723

<212> DNA

<213> B.fragilis

<400> 2633

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<210> 2634

<211> 1107

<212> DNA

<213> B.fragilis

<400> 2634

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<210> 2635
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 <212> DNA
 <213> B.fragilis

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 aatgaaatta tggctacagc tttcagaatt tcaaatttag gagaaaatga tttgaaagaa 360
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 <212> DNA
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2328

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<211> 894

<212> DNA

<213> B.fragilis

<400> 2637

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<210> 2638

<211> 915

<212> DNA

<213> B.fragilis

<400> 2638

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<210> 2639

<211> 1131

<212> DNA

<213> B.fragilis

<400> 2639

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<210> 2640

<211> 378

<212> DNA

<213> B.fragilis

<400> 2640

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cttccctttg cctttaccga acaaggactg gccatgctct cggagtgtt aaacagtgat 300
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ggctcttccg gtgaatga 378

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<210> 2641

<211> 342

<212> DNA

<213> B.fragilis

<400> 2641

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<210> 2642

<211> 195

<212> DNA

<213> B.fragilis

<400> 2642

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agagagctgt tttattgcaa ttttgttctc tggagtaagc aaattgtcta cattttgttc 180
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<210> 2643

<211> 456

<212> DNA

<213> B.fragilis

<400> 2643

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<210> 2644

<211> 621

<212> DNA

<213> B.fragilis

<400> 2644

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<210> 2645

<211> 804

<212> DNA

<213> B.fragilis

<400> 2645

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gaagacatta	tcaaagcacc	gacggcgaac	atcacccaaa	gcctggcagg	acgtgctccc	540
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<210> 2646

<211> 1623

<212> DNA

<213> B.fragilis

<400> 2646

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<210> 2647

<211> 1617

<212> DNA

<213> B.fragilis

<400> 2647

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<210> 2648

<211> 183

<212> DNA
<213> B.fragilis

<400> 2648

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cagtacggag	acgaaataaa	tcatacaaaag	aatgaaatct	gcgtaaagaa	tggaattatt	180
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<210> 2649

<211> 1914

<212> DNA

<213> B.fragilis

<400> 2649

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<210> 2650

<211> 669

<212> DNA

<213> B.fragilis

<400> 2650

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<210> 2651

<211> 1014

<212> DNA

<213> B.fragilis

<400> 2651

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acagaaaaag	acattcttat	ccacaatgct	cacagcatgg	ataatacgtt	gcaactgaaa	840
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gctcctacct	ataacgatgc	agtcgccgag	cagattgatg	aagtgaaagc	caaaaagaag	960
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<210> 2652

<211> 183

<212> DNA

<213> B.fragilis

<400> 2652

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gaccaactct	cttgggggaat	taccgaaatt	ctttttgcag	tattttattga	aactggccgc	180
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<210> 2653

<211> 1248

<212> DNA

<213> B.fragilis

<400> 2653

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gagtattctc	ttgggtggaa	gattcatact	tctaatttct	ctgcagatcg	tgagcgtggt	180
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cgcgagttga	cttattgttt	tcttacggat	tatattcatt	ttctacgtat	gcgcgggtatc	540
tctgaaaata	ctgtgaatat	gtatatcgc	aatctccgcg	ctgtctataa	caaagcccaa	600

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tcctccgaac ctttattgga tcgtgcccg gatcttttta tgtttagttt ctatgcccg 780
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gggcatactt ctgaggcaac gaccagatt tatcttcagt cttttaatag tgagggtcatt 1200
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<210> 2654

<211> 354

<212> DNA

<213> B.fragilis

<400> 2654

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tcaaccgaga acgctgaatt ccaggttaat ccttcactca cactgacttc ccctgtgacc 180
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gccgtatcta caggtagagt aaccggtaca cttttaattt ctgataaaga tggctctccg 300
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<210> 2655

<211> 903

<212> DNA

<213> B.fragilis

<400> 2655

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agtccagacct tatctgttaa aactaatttc ctgatcttca ttcttgaagg tgaagtggag 180
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ttcggcttct cttcagcggc cagtttcaat aaatactgca aaaagaattt cggttaattcc 840
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<210> 2656

<211> 786

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (83), (131), (164), (239), (248)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2656

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ttatgcttgg	naggttaagg	tgggtgattac	gagattggca	ttnttagaca	ggtatttcct	180
cacaagttta	gtccggctgt	ctctccgggg	attaccactc	tttcggattt	tcgtgtaana	240
gcgtattntg	agcagaaaga	aaatttggaa	tactcacttg	gtgagttggt	ctttgggcgc	300
ctggactcca	tggagatcac	agctgataac	ggtgggacag	gtgtagtaga	cttaatgaaa	360
aacacgaata	agatagaagt	ccgtgtgaag	ggaatcgctg	atgggttcac	agcccgtatc	420
acctctgata	acggacgctt	taactcagaa	aatgttacgc	cggccgatgc	cggtagcatt	480
atatatgttc	cttattatag	cgcactctca	acggatgata	cccgtgtttt	ccagtttgat	540
gtattgcgcc	tgtatactga	cgggcatctg	ttccttaaat	tgctgaatcc	cgatggaaca	600
gatgttattc	cgggattttac	aaaagatttg	atcaatgcta	ttatgtcctc	tcccgcatat	660
catactcagg	aagatttggg	tagagaggat	acctatctga	ttgaattggg	gctttctaaa	720
gacggagtca	ttgtctcttt	gcgggtaaat	ggctgggaaa	ctgtcagtag	tactccggag	780
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<210> 2657

<211> 246

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (144)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2657

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cagagatcta	tgaaccctga	cttntcatgg	ggattcacca	gtttggaccc	ttcgccgttg	180
aacctgttaa	tcaaaaaatc	caagggtttt	ccgggtttgc	ccgttccgtt	taaaaaacat	240
tggttag						246

<210> 2658

<211> 834

<212> DNA

<213> B.fragilis

<400> 2658

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caccggggag	cggactgtat	tgtccgggag	aatacgtctg	cttcggcgga	ttcatgtata	180
aagtataaga	ttgacttcat	ggaatgtgat	atttgtatca	gtaaggacag	cgtattctat	240
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gatgtagaag	agtctgaccg	gaaagctatt	gaactcgggg	tggatgtgct	ggccacggac	780
agaccggagc	tgtttgtaaa	gaaatacaga	ccagagcata	catggacaaa	atga	834

<210> 2659

<211> 189

<212> DNA

<213> B.fragilis

<400> 2659

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tatttcgtct	ccgtactggg	gaattgtatc	gttcggttga	ttttttcttt	tgatctcgaa	120
gcgagaggta	cttatcagaa	tgataattat	gtctttgaag	agcaaattga	tgatatcttt	180
caggaatag						189

<210> 2660

<211> 2397

<212> DNA

<213> B.fragilis

<400> 2660

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agtatgacca	atgacggatt	ggcaccggcc	tatacggacg	atgaactgga	actggtccgc	180
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ggatacacta	aaaacgaaaa	cctcagtgcc	atagcaaacc	tgcactgga	gtggagcgta	660
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<210> 2661

<211> 1740

<212> DNA

<213> B.fragilis

<400> 2661

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<210> 2662

<211> 570

<212> DNA

<213> B.fragilis

<400> 2662

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tggaaatttag	agttttgaggc	aggtcttggg	gtcttgtgga	cccattatga	taaatatggt	480
tgtaaggcat	gcgggcagaa	agtggtctact	tttaaggggag	cacgtctgat	tccgaccaag	540
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<210> 2663

<211> 1179

<212> DNA

<213> B.fragilis

<400> 2663

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atcggtttct	cacgggtcaa	tgctcggttat	tcgtatgctt	ctgagagtgt	tgttacgttt	1140
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<210> 2664

<211> 273

<212> DNA

<213> B.fragilis

<400> 2664

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tgttcacgga	tgtttatggt	acagccaagt	tatcttttgc	atacgggtga	aggcgatcgt	180
tttggaaga	ctgtccacca	tatagatgtg	tatgcgttcg	actccctcgg	catttatcgg	240
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<210> 2665

<211> 201

<212> DNA

<213> B.fragilis

<400> 2665

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tgtggagtaa	tcttggattt	tgacagtact	cctttttttac	aggatgctat	catgcagaat	180
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<210> 2666

<211> 1332

<212> DNA

<213> B.fragilis

<400> 2666

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aactgggttca	gttcgaatgt	atcttttcag	acggtgaaac	gcttctatta	tccgctgaag	300
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<210> 2667

<211> 1278

<212> DNA

<213> B.fragilis

<400> 2667

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gtttcgtttg	tggctactta	catcccgggtg	tcgaaagctg	cccggatgaa	tcttgcggat	1260
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<210> 2668

<211> 342

<212> DNA

<213> B.fragilis

<400> 2668

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tgtagtatgg	gtgaggagat	taaaacagga	ataggggtaa	aaatatccgt	aattagggtt	240
gtatcgtcgg	catttttcct	gccaatgtac	ccgagattaa	tagaactttt	agttcaccaa	300
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<210> 2669

<211> 915

<212> DNA

<213> B.fragilis

<400> 2669

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gtgtttccca	cacattttcac	tctcaattat	ggattatacg	ctctgttccct	gaaacagaca	180

aagtgtggcg	atctgcgtta	cggacggcaa	atgtatgact	atcaggaagg	cacagtgaca	240
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cacggaatac	ttttccatcc	cgaccttate	cgcggcacgt	ctttgggaca	ggaaatcaag	360
cactactcgt	tcttttcata	cgcatcgaat	gaagccctgc	atcttttcgga	cgacgagaaa	420
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<210> 2670

<211> 1290

<212> DNA

<213> B.fragilis

<400> 2670

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tatgaagagt	ttcctgatta	tatgtactat	tatattccgc	tgatagcttt	gcgtatagac	720
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ttagtgaacc	tttgcttggg	agtagcagga	actttctgga	tgcagaccgg	ttcacgccgt	960
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ttgctgctga	ttgtagtctt	catcggaatc	tggatgccgg	cacataaaact	tagccgtatc	1260
agtccggtag	atgcgctgcg	tgacgaatga				1290

<210> 2671

<211> 1284

<212> DNA

<213> B.fragilis

<400> 2671

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<210> 2672

<211> 675

<212> DNA

<213> B.fragilis

<400> 2672

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<210> 2673

<211> 1206

<212> DNA

<213> B.fragilis

<400> 2673

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<210> 2674
 <211> 648
 <212> DNA
 <213> B.fragilis

<400> 2674
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<210> 2675
 <211> 246
 <212> DNA
 <213> B.fragilis

<400> 2675
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 ggaacttgga aaaaagtgat aaatcggtt ttatataact tcgaaccttc tgattcgtcc 180
 tttttcttta ttatttcacc tgtacgggta gtcgtattgg tccgggaagc tgattatgtt 240
 aatga 246

<210> 2676
 <211> 402
 <212> DNA
 <213> B.fragilis

<400> 2676
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 gtaaacatatt ggtcgggtact gatgcaggag tatatattta ctatcctgag aaggaggctt 360
 ttgaggaatt cgattgccag agcttggaga agacaaggat ag 402

<210> 2677
 <211> 384
 <212> DNA
 <213> B.fragilis

<400> 2677
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 ttcaacctgt ttccattgt tggcacatgg gaaagcatta atctgaatcc tacggttatc 180
 atctaccgga acgacaacga ttatcttctc tctattatct atgtatcgga aaccacaaaa 240
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 gctcctaaac ggggtttatat agattatgat ccagtgaag atgtgcttaa tctttcatca 360
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<210> 2678
 <211> 324
 <212> DNA
 <213> B.fragilis

<400> 2678
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 aagcaaccga tcttagcatc tattgctgtg ctcaactcca caggcttacc tagtgaggga 240
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 tgctttgagt attggaagca atga 324

<210> 2679
 <211> 612
 <212> DNA
 <213> B.fragilis

<400> 2679
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 atcgtaacaa agtatttcga agagctggaa accaaaatga atgcagcgaa catcgaacaa 240
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 aaatgccact acgaaggtag cctgattgac ggaaccctgt tcgacagctc tatcaaactg 420
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<210> 2680
 <211> 1500
 <212> DNA
 <213> B.fragilis

<400> 2680
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 gcagacatca cgcttgccga cttcgggtcg aaggaaatcg acttggcaga aaaagagatg 180
 cccggcctta tggctcttcg cgaaaaatat ggagaatcca aaccattgaa aggtgcccg 240
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<210> 2681

<211> 363

<212> DNA

<213> B.fragilis

<400> 2681

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<210> 2682

<211> 1599

<212> DNA

<213> B.fragilis

<400> 2682

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gcccataaag	aaaaggccca	taccctctca	aaaccgaata	tcctctttat	tatgtgtgat	180
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<210> 2683

<211> 183

<212> DNA

<213> B.fragilis

<400> 2683

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<210> 2684

<211> 1359

<212> DNA

<213> B.fragilis

<400> 2684

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<210> 2685

<211> 342

<212> DNA

<213> B.fragilis

<400> 2685

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<210> 2686

<211> 237

<212> DNA

<213> B.fragilis

<400> 2686

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acaatgcccg	ataacacgat	gocggctact	gtagcaagcg	taaattttaa	gaaatctttc	180
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<210> 2687

<211> 990
 <212> DNA
 <213> B.fragilis

<400> 2687

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ggaatctata	ccgatggctt	tttcaatttg	gtagatgata	atatctataa	atcaatgggtt	180
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<210> 2688
 <211> 195
 <212> DNA
 <213> B.fragilis

<400> 2688

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<210> 2689
 <211> 2049
 <212> DNA
 <213> B.fragilis

<400> 2689

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<211> 972

<212> DNA

<213> B.fragilis

<400> 2690

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<210> 2691

<211> 786

<212> DNA

<213> B.fragilis

<400> 2691

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<210> 2692

<211> 789

<212> DNA

<213> B.fragilis

<400> 2692

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<210> 2693

<211> 1062

<212> DNA

<213> B.fragilis

<400> 2693

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catattacaa	agcccgaatt	aggctgcgca	ctgatcacac	gcgatgggtca	ggaattcgag	1020
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<210> 2694

<211> 1323

<212> DNA

<213> B.fragilis

<400> 2694

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ctaaactaca	ttgattcata	catcaaagaa	catctaacta	attttagtat	ggaagaggta	420
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<210> 2695

<211> 504

<212> DNA

<213> B.fragilis

<400> 2695

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<210> 2696

<211> 339

<212> DNA

<213> B.fragilis

<400> 2696

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<210> 2697

<211> 699

<212> DNA

<213> B.fragilis

<400> 2697

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cacctctttt	taataggaaa	aggagccaaa	ttgaaaactc	taaatgaagt	ggaactaaaa	660
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<210> 2698

<211> 543

<212> DNA

<213> B.fragilis

<400> 2698

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<210> 2699

<211> 1842

<212> DNA

<213> B.fragilis

<400> 2699

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<210> 2700

<211> 3537

<212> DNA

<213> B.fragilis

<400> 2700

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<210> 2701

<211> 1971

<212> DNA

<213> B.fragilis

<400> 2701

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<210> 2702

<211> 288

<212> DNA

<213> B.fragilis

<400> 2702

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<210> 2703

<211> 201

<212> DNA

<213> B.fragilis

<400> 2703

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<210> 2704

<211> 189

<212> DNA

<213> B.fragilis

<400> 2704

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<210> 2705

<211> 1128

<212> DNA

<213> B.fragilis

<400> 2705

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<210> 2706

<211> 1332

<212> DNA

<213> B.fragilis

<400> 2706

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<210> 2707

<211> 3756

<212> DNA

<213> B.fragilis

<400> 2707

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<211> 258

<212> DNA

<213> B.fragilis

<400> 2708

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aggataaagg	atgaagatac	cggttcagac	ggtgtaaact	cactttcgaa	acttgagcta	180
tcttattcag	ccggtgtctg	ttttttctta	ttaaagcaag	caaaaaggac	aattatcaac	240
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<210> 2709

<211> 303

<212> DNA

<213> B.fragilis

<400> 2709

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 <212> DNA
 <213> B.fragilis

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<210> 2711
 <211> 741
 <212> DNA
 <213> B.fragilis

<400> 2711
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<210> 2712
 <211> 1233

<212> DNA
<213> B.fragilis

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<210> 2713
<211> 1308
<212> DNA
<213> B.fragilis

<400> 2713
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<210> 2714
<211> 264
<212> DNA
<213> B.fragilis

<400> 2714
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<210> 2715
<211> 186
<212> DNA
<213> B.fragilis

<400> 2715
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tattga 186

<210> 2716
<211> 1902
<212> DNA
<213> B.fragilis

<400> 2716
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<210> 2717

<211> 858
 <212> DNA
 <213> B.fragilis

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 attctgggaa cgggacttgg cagtctggca aacgaaatta ccgaaaagta tgaaataaaag 180
 tacgaagata tccccaaactt tcctgtgtct accgtagaag ggcacagcgg taagcttatt 240
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 cagggaccca cattcgaaac acctgcagaa taaaaactgt tccatatctt aggagctgat 660
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 ttcggcattt ccgtcgtaac agatcttggg gtagaaggaa agattgtaga agtatcacac 780
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<210> 2718
 <211> 1923
 <212> DNA
 <213> B.fragilis

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 cgcttcaaag ccgaccggcc gggcaagcag aaccttactt tcagttactc ccccaatccg 180
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 ggagtaaatc ctgccgaaac caccogtcaa tggatggaca atgccgtagc catgggatat 480
 gatgtactct tcaaacagca ttacgacgac tacgccgctc tgttcaaccg ggtaaaacta 540
 caactgaacc cggacgcaca aagcgccaac ctgccaccg gcaaacgctt gcaaaactac 600
 cggaaaaggac aaccggactt ttatctggaa gaactctatt atcagttcgg acgttatctg 660
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 atcttctcaa aagcaggcga acctgtgacg gtgagatagc gagataaac tctctctttc 1860
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taa

1923

<210> 2719

<211> 2067

<212> DNA

<213> B.fragilis

<400> 2719

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cgggcagaca	tctatgtccg	ctatctgcga	ctgaaaaaag	aagatgtact	tttcatcgga	180
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caggatgtag	tagaccgcta	tcaattcctg	attaagaaat	cattcgaaga	attcgggtatc	300
tcgtttgacg	tatacagccg	tacatcatcc	aaaacacacc	acgaactggc	ttcagacttc	360
ttcaagaagc	tatacgaaaa	aggagagttt	atcgaaaaaa	cttcggaaca	atattatgat	420
gaagaagcac	accagtttct	ggccgaccgc	tacatcaccg	gtgaatgtcc	tactgtcat	480
tcggaagggtg	cctatgggtga	ccaatgcgaa	aagtgcggaa	cttcactgtc	gccactgac	540
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aaagaatggc	gtccaaacgt	gtacggacag	tgcaaaagct	ggctcgatat	gggtttgcag	720
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<210> 2720

<211> 204

<212> DNA

<213> B.fragilis

<400> 2720

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tatatatta	gttttttgc	gcatgggttg	tcagcgaaat	acattgcgag	gtcctatttc	180
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<210> 2721

<211> 195

<212> DNA

<213> B.fragilis

<400> 2721
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 cctccgagag ccaaggcatc cgccatgcgc ccttatttac tttcttttat cgccagattc 180
 atctcctttt cttaa 195

<210> 2722
 <211> 189
 <212> DNA
 <213> B.fragilis

<400> 2722
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 attattataa attcttgcac attattaaaa gttatcgcat ctttgccgag agatattgtg 180
 attttataa 189

<210> 2723
 <211> 345
 <212> DNA
 <213> B.fragilis

<400> 2723
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 atagaagaca ttatgttagt taatgttgag agtctcgctt tcccgaaag tggaataggt 180
 agtgatatga gaatagcaac taaacatgtg tggtatctta ataataaagt ctttgatgaa 240
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<210> 2724
 <211> 2049
 <212> DNA
 <213> B.fragilis

<400> 2724
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 ctggatcagg tcaactcgca agagtatttc cagactgcag accacctggc agcatatacc 180
 atttcaaaat acaactctat gttctcaaca catagcggat ggaatgccgg tacggtaaac 240
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atcaaatcgg	gaaaatttgc	ggaaaatagc	actgtgatat	atcctaaata	taaagatagt	1020
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<210> 2727

<211> 1074

<212> DNA

<213> B.fragilis

<400> 2727

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ctgtatggga	cagatgcttt	gtacgatcgt	atagatacga	tttatgcaga	gaaaggcaag	180
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ctctctccca	ccggcaaaat	tctagcaaga	gatatccagg	gagaagcgct	taccgataag	1020
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<210> 2728

<211> 297

<212> DNA

<213> B.fragilis

<400> 2728

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ggtttcaatc	cgattttcaa	agctttctgc	agcaciaaagc	gcgtttgcgg	catcgggcct	180
tcaaaagcat	caaccaacag	aatgcatccg	tcggccatgt	tgagcacacg	ctctacttcg	240
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<210> 2729

<211> 318

<212> DNA

<213> B.fragilis

<400> 2729

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caagaaacaa	tacaaccatg	taagaagcac	catcttcaca	tcatagggaa	taaaacttgt	180
gacttggaat	tggaggatgt	atatactctc	tgtaaaatca	tacaggctgt	tgttgcagaa	240
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<210> 2730

<211> 558

<212> DNA

<213> B.fragilis

<400> 2730

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<210> 2731

<211> 630

<212> DNA

<213> B.fragilis

<400> 2731

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ttagcttatg	aagattctat	aaaagaaagc	agtcacogaa	ttgagcggga	aattagaaac	180
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aatagcgtat	atgttcctca	aatagatgaa	agtaacgtaa	caaaaacata	ttttcaccgg	600
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<210> 2732

<211> 876

<212> DNA

<213> B.fragilis

<400> 2732

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<210> 2733

<211> 1515

<212> DNA

<213> B.fragilis

<400> 2733

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<211> 1401

<212> DNA

<213> B.fragilis

<400> 2734

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<211> 360

<212> DNA
<213> B.fragilis

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<210> 2736
<211> 1113
<212> DNA
<213> B.fragilis

<400> 2736
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<210> 2737
<211> 1068
<212> DNA
<213> B.fragilis

<400> 2737
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<210> 2738
 <211> 1143
 <212> DNA
 <213> B.fragilis

<400> 2738
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 tag 1143

<210> 2739
 <211> 1155
 <212> DNA
 <213> B.fragilis

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<210> 2740
 <211> 3264

<212> DNA

<213> B.fragilis

<400> 2740

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 <211> 1917
 <212> DNA
 <213> B.fragilis

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 gataaaatgc ttttagccgg aaacttggtt cgcggaacc aaacaagcgg agaattaatt 240
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<210> 2742
 <211> 1308
 <212> DNA
 <213> B.fragilis

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<210> 2743

<211> 1077

<212> DNA

<213> B.fragilis

<400> 2743

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<210> 2744

<211> 1179

<212> DNA

<213> B.fragilis

<400> 2744

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cttcgcaaac	gcctgggggt	ggaaatagcc	ttaaagataa	gaaataacct	caggggaattg	180
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gaaaaacggt	ttcaggtatt	tcgtaatcgt	gagtgggccc	gtaagggaga	gtgtgctgat	1080

tgtagctttt	tccgttattg	tgagggcaat	ggtatgcatt	tgacacaatga	caatggagac	1140
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<210> 2745

<211> 1491

<212> DNA

<213> B.fragilis

<400> 2745

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<210> 2746

<211> 183

<212> DNA

<213> B.fragilis

<400> 2746

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<210> 2747

<211> 732

<212> DNA

<213> B.fragilis

<400> 2747

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aaaggaaaaa	gcataacagg	agaaagagat	cggaagcta	ccgaaaagcg	gttgctagat	180
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atggctgctt	acatacggca	acatgatttt	tggatcaatt	tccctcttga	atatcccagc	360
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<213> B.fragilis
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<210> 2749
<211> 381
<212> DNA
<213> B.fragilis
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<210> 2750
<211> 1260
<212> DNA
<213> B.fragilis
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<210> 2751

<211> 195

<212> DNA

<213> B.fragilis

<400> 2751

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atattcgttt	attcaaggat	tttggttaaa	tttgtaaggc	cttctttcac	gtttcttttg	180
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<210> 2752

<211> 315

<212> DNA

<213> B.fragilis

<400> 2752

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<211> 1461

<212> DNA

<213> B.fragilis

<400> 2753

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 <211> 1212
 <212> DNA
 <213> B.fragilis

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 aaactaaciaa atacccctaa cgggtccgcta a t c a g t t g c g a t c t g a a g g c a c t a a a g a t 180
 actgtaaaact tcccattgag ccagtttaaca g a a g a a t t a c a g a t t g t a a a a t t a g a c a a t 240
 cgggacgaag cactttattgg cggctggata c g a a c a a c c g t c g g a g a a a a t a t a t t t t a 300
 gtgagcaata acaaacaac t c c t t a t a a a c t a t t c g a c c g g a c a g g t a a a t t t a t c a c c 360
 aatatcggtat cttatggaca aggcccggaat g a a t a t c t a a a c a c t t a t g c c g a a c a a c t g 420
 gacgaagcca ataatcgcat ctatataccta c c c t g g c a a a g c a g a a g a t a t t g g t a t t c 480
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 aaagagatac tagagaaaaga agtaaacaaa a a a g g a c t g a c c g a g a t a a a a a g a a a a g 1140
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<210> 2755
 <211> 585
 <212> DNA
 <213> B.fragilis

<400> 2755
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 aagaaagaac acttcacttt tgcaacaagt g t a g g a a c a g g t a t t g a c a t g a g c g a g c c a 180
 gcagctactc cttttttcatt acagggttctg g g t t a t t a t g c c a t c a a c a a a c g g t t c t c t 240
 gtcgggtgtcg ggacaggatt atctatattat g a g a a a g t t c t g a t c c c g t t a t t g c c g a t 300
 gcaaaattttt taatcataaa acctagaaaag t t c a c t c c t t a t a t a g a a t g t g g c g t t g g a 360
 tatagtttttg caccgaataa aaatgctaata g g a g g t t t t t a t c t g a a t c c g t c t g c t g g g 420
 gtagaatatt ctatttgtaa aagtaagaag t t a t t c t t g g c t t a g g a t a t g a a t c c c a g 480
 aaacttgaac gactgaaaac gcaaaagcaa t c a t t g t t a c a g c c g a g t t t a c a g a g a a g 540
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<210> 2756
 <211> 231
 <212> DNA
 <213> B.fragilis

<400> 2756
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 ttctctcccg t g a c c a t t g c a g a c a a a g c g t t g t a c a c t g a c a g a a a a g c a g g a a g g a g a 180
 ccggaagagg aaccattttac cggcagaacc g t c a t t c c a c c t t c a a a g t a a 231

<210> 2757
 <211> 1545
 <212> DNA

<213> B.fragilis

<400> 2757

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gccgttaaag	aaagccatca	gcgcattctg	tctgccttac	aagtgaaccg	ctacaaaatg	180
ccaaccagca	atatagtcac	taatatggct	cggcgagata	ttcgcaaaga	gggttcaccc	240
tatgatctcc	ccctggccat	tggcatgctt	gcagctggcg	aaacaatctc	atgccagaag	300
ctatcacgtt	acatgatgat	gggtgaatta	agtcttgacg	gaactatcca	acccatcaaa	360
ggagccttac	ctatagccat	caaagcacgc	gaagagggat	ttgacggatt	aatcgtacct	420
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acccgtgaag	aatttttatgc	gtgtcagagt	gatttttgaat	acgattttgc	agatgtaaaa	600
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atggtaggag	cccccggaag	tggtaaatca	atgatggcca	aaagattacc	ttccatactc	720
cccccttat	ccttggggaga	aagccttgaa	acaaccaaaa	tacattcggt	cgctggtaaa	780
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aagatttcag	accggcaaca	gggagaatcc	agcgtgccca	ttcgccaaag	ggtaatcaaa	1260
gcccgcacaa	aacaggaaga	aagattttcc	ggctatccgg	gaacttattg	taatgcccag	1320
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tcccgcacaa	tagctgattt	ggaagaaagc	gaacaaatac	aaccagcca	tttggcagag	1500
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<210> 2758

<211> 1215

<212> DNA

<213> B.fragilis

<400> 2758

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gtagaaacca	tcaatcaggg	taaaaacat	attgtggagc	cggaaactga	tcagattgta	180
aaagaggtgg	tgcgaacagg	taatctccgt	gccgtttcga	aacctgagca	ggcagatgct	240
ttttttgtgg	tagtgcctac	ccctttcaaa	caaaaccacc	gtgcagatat	cacctatgtg	300
gaatcggcta	cccgctccgt	aattccttat	ctgagagaag	gaaacctgtt	tgttatcgag	360
tccacttcac	cggtattttac	gaccgaacgt	atggctgaag	ttattttata	agagcgccc	420
gaactgaaag	acaaaatata	catagcctat	tgtcccgaac	gtgtattgcc	gggtaatacg	480
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acggcagaaa	tgtgtaagtt	gaccgagaac	tcttcgcgcg	actctcagat	tgcgtttgcc	660
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gctaacaac	atccgcgtgt	gaacatcctg	caaccggcgt	gcggagtggg	aggacactgt	780
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tttcatctga	ctgactatcg	ggaggcttat	cagaaagcgg	atatcgtgg	atggctggta	1140
cgtcacactc	cgtttgtgga	gttgcgccgt	gaagaaagta	aattggagtt	ggacttctgc	1200
ggagtaagaa	agtag					1215

<210> 2759

<211> 1140
 <212> DNA
 <213> B.fragilis

<400> 2759
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 gcacatcagc tcaacctccc atggctgaac agtattcttt tccagttcga tcatgaagta 180
 tgggaagggc tccgtttctg ggatctggta atgcctcttt tccctctcat gacaggagcc 240
 tccatgccgt tctcgttctc caagtttaaa gacaatccgg acaaaggccc cgtttaccgc 300
 aaaatcatca aacgcctcat ccttctgttc atcttcggaa tgattgtaca gggcaatctg 360
 ctgggcctcg acccgaaaca tctgtattta tactccaaca ccttcaagc cattgccaca 420
 ggctatctga ttgccgccat catacagttg cattgcaact tccgctggca gctgatggtc 480
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 gaaggaaact ttgccgagaa ggtggacagg ctgggtactgg ggcatcttcg cgacggagt 600
 ttctggaatg aagacggcag ttggagcttc tctgctcact acaactacac ctggatctgg 660
 agcagcctca ctttcggggc taccgtgatg ctgggagctt ttgccggaaa gataatgaaa 720
 gcaggttaagg ataatcgccg gaaagtggta cagaccttgc tgataatcgg catatccctg 780
 atagccttct cgtgatgatg gagcctgcaa atgcccataca tcaaacgggt gtggacaagc 840
 agcatgacgc ttttttccgg cggactttgc ttctgctga tgggtgcctt ctactaccgg 900
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 attacggctt atatcttggg agaggtcatt aacttccgtt gcatagcagc atccgtcagt 1020
 tacggactgg agcaatactt ggggtggtat tatcaggtgt gggttaagctt tgccaactat 1080
 ctgattgtat tccttatctt acggatcatg tacaggcaga agatattcct gaagatctga 1140

<210> 2760
 <211> 669
 <212> DNA
 <213> B.fragilis

<400> 2760
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 gcgttatggc caattgtatt cctgatatcg cgtatcctgc acgagcggaa caaacgtgcg 120
 aagccatcgg gtgacactgc ctctgccgaa acggaagaag tgacagagga aatgactacc 180
 tccgcactga tcatgagcat ctttcaacag ctccggttgcc aaccggaagt gaatgaagaa 240
 aatcatatca gcttcaagta tcagggagag gatitccttg tccgagccga agacgggtctc 300
 cgggttaatca ttgtatggaa tccttggtgg gcgtccatca gtatcgacaa tcaggcatta 360
 ccctatctga aagaaattat caatgcagtc aatatgaact cattagtac tactgtctat 420
 gcgctggacg aggatgaaaa aacatttggg atccacagta aatgccatat gctcttcgct 480
 cccgaagaag aggagccgga aaaaagtctt accgacctgc tggacagttt tttactacc 540
 cacaatacta ttaaagaaaa cctgaaacaa ttgggtaacg gaatgccgga tatggaaaag 600
 aaagaacgag taagaatcaa aggatttgct gcctacaagg acaacagcac ggaactgaaa 660
 ggggaataa 669

<210> 2761
 <211> 264
 <212> DNA
 <213> B.fragilis

<400> 2761
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 cgtgagaact taatcacctt tggacaaaca aatttaataa acaaatcagc atgggttcaga 120
 aaggagcaag aaaagaatga catacatata gtaacctcta ataattatgc ttatgaagta 180
 gaaaaaacga atcctttaca aaccttattc cggaacaaaa ataaaatccg gaatcctaaa 240
 acaaactatc aaattaatgt ttaa 264

<210> 2762
 <211> 267
 <212> DNA

<213> B.fragilis

<400> 2762

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cctggggctg	gagaagggtcc	caaggggttg	gctgttcgcc	cattaaagtg	gcacgcgagc	120
tgggttcaga	acgtcgtgag	acagttcggg	ctctatctat	cgtgggcgta	tgaaatttgc	180
gtggctctga	cactagtacg	agaggaccgt	gttgactga	cctctgggtt	accggttgtg	240
ccgccaggtg	cattgccggg	tatctaa				267

<210> 2763

<211> 690

<212> DNA

<213> B.fragilis

<400> 2763

cgtgttacaa	gaatacgtctg	taatgacatc	tgtaataacc	atcttctttt	taatgggttat	60
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cggaaaacga	tattcactac	catttccata	gacaaggaaa	cggcaacttt	agtaggaaa	180
atatgcaaac	gttattcact	gaaaaagagt	gaagtgttaa	agttggcatt	cggatatata	240
gataaggcac	atatcaatcc	atccgaagcc	cctgaatcag	taaaatcgga	actggcgaaa	300
ataaataaaa	ggcaggatga	tattatccgg	ttcatccgtc	attacgagga	aaaacaactg	360
aatccaatga	tacgggtaac	aaattctatc	gctttgcgtt	togatgccat	cggcaaaact	420
ttggaaaactc	tcattctctc	acaactggaa	gccaatcagg	agagacaaac	agccgtactt	480
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attaatgcac	tttaccagat	acatcaacgg	gattataaaa	agttgcttca	tctaatacaa	600
ctctattcag	agttatcaac	ttgtggcgtg	atggacggca	aacggaaaga	gaacctaaaa	660
ggggaaatcg	tcaatttgat	aaatatatag				690

<210> 2764

<211> 333

<212> DNA

<213> B.fragilis

<400> 2764

accattaaaa	gtaaaagtat	ggaggtagta	accattgaaa	aaagaacatt	cttgtatatc	60
tgcgagaggt	tcacggaggt	tgctaaacga	acagaaagtt	tgtgcaatac	tcatactcag	120
gaagtcgaaa	actggctgga	tagtcaggaa	gtgtgcctgt	tgttaggttt	tagtaaacga	180
acgctgcaat	attatcgaa	tagtggcgga	ctggcttatt	ctcaaatagg	aagcaagatt	240
tattataagt	cttctgatgt	ggaaaagaatt	attgcgga	gtgaaacaca	aatcaatca	300
ctcaaacaag	ccacgcctta	tgaaaagaac	taa			333

<210> 2765

<211> 1041

<212> DNA

<213> B.fragilis

<400> 2765

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gcacttaaga	ataagaagga	agaagaaaaa	ccgatatttc	ccgactttat	atcttatatt	120
gactattaca	tggtatttatg	caaacaaggt	aagattctga	atgtggatgg	tacaaaattg	180
tcctctgcaa	ctctggctac	ctataaatcc	acaagaaata	ttctaaagaa	atatgcagca	240
gcccgtaatg	taacaatcag	aatcgaggaa	gtagattctg	agtttcgtaa	tgacttcata	300
aatttctctgt	atgatacaaa	acaccataat	gggtgaataca	aactgaactc	aatcggtaaa	360
tttataaaga	cgatttaaggt	tttcatgcgc	catgcgttcg	acaacaatgt	tacctctaac	420
aatagtgtgt	ttaaaaaaga	ctttgttcca	ttgaagggaag	aagcaaacac	gatctatctt	480
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gatgtgaagc	atatcaatgt	ggaaaagaac	acgataacga	tagtcacata	taaaacacgt	660
aatcaagtaa	tcatttctat	acatcgaatt	gtaaggggga	tattaaaacg	ctatggaaac	720

aggccgcccga	agccccaatg	taaccaatca	acaaatcggg	tgctcaaaaa	gctatgcgaa	780
caagctggca	ttacggaaat	aatatcctat	acagaaactg	ttggaggagc	acataaggaa	840
tgcacagccc	gtaaatgtga	taagggtgaca	acccataccg	cccgaaggag	tttcgcaacc	900
aatgcttaca	aacggaatgt	ccctacgcta	gcgataatgg	caatcacagg	gcataagact	960
gaaacctcat	tcatgaagta	tattcgtata	agtaaagagg	agaatgccca	attgctacaa	1020
acgcatgaat	tttttgtatg	a				1041

<210> 2766

<211> 183

<212> DNA

<213> B.fragilis

<400> 2766

ttatgggaaa	gggaaaggtc	ggggaaggaa	agggacacat	tattatatta	tataggggaa	60
atztataggg	gagagggaaa	aggggatttg	ccgagaaagg	gggaaggaga	agtgtttgcg	120
ggaggaaaag	ggatgtttcg	aggaagaata	tcgcggaagg	aattgggggt	gggagagaga	180
taa						183

<210> 2767

<211> 315

<212> DNA

<213> B.fragilis

<400> 2767

gttatgagaa	gtacaaaatg	gatggtagg	attattctat	ttgcttgtgt	attgactcta	60
ataggcggtta	caaaaagtgt	aagggtctaa	aatcaattag	gaaaattgac	atttctgggc	120
gttgagagtt	tagctgatgg	tgaaggagga	gggagtgact	atcgagaggg	gactcctcat	180
gattgtaatt	attctaagga	tgtattcctt	gaagggtcgg	accatatcat	aaatgtaacg	240
gttcctggca	aaaaaggaat	ttgtgatgg	actaatggta	catgcaatag	ctggccgtgt	300
agagaggtaa	aataa					315

<210> 2768

<211> 216

<212> DNA

<213> B.fragilis

<400> 2768

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tttcacagat	taataattta	ttttattgat	aacaagatta	gaagttctgt	gaaaatctgt	120
gttatctgtg	gtgaaacagg	ttcattgcta	ttccgtttca	attattccca	ccccggattg	180
ttaggtgcaa	gtgccggatt	caagataatt	tcttga			216

<210> 2769

<211> 1113

<212> DNA

<213> B.fragilis

<400> 2769

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caggaaaaca	tctctataac	ttccgaccaa	ggcaagacct	atgatttcaa	tactgcagac	180
aaactcaaca	cattgcttat	aaacgctttg	gtttctacag	gcgagttgaa	ggaaattgag	240
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tatatcgaga	acagcgatgg	taacacgaat	gtgcgttttc	atcaggcaga	caccataag	420
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tttgggctca	agaaaacgag	tcgcataaag	gcttttgtct	tcagattcat	ctccgtacct	1020
gccaagtgga	tcatgactgc	aaggcaatac	gtgctgaata	tctacacaga	gaaccgagct	1080
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<210> 2770

<211> 336

<212> DNA

<213> B.fragilis

<400> 2770

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ttggctacca	gttgacagaga	tatattcagg	atagtaccta	cacgttccat	atccgtcttt	180
gccagtttcc	agggttctgt	atcggccagg	tatttatttc	cgatacgagc	cagattcatg	240
gcttctttct	gtgcatcacg	gaacttgaat	acattgagca	gcttttctac	ttcggcttta	300
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<210> 2771

<211> 225

<212> DNA

<213> B.fragilis

<400> 2771

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gacgaaaaca	ataacatcct	tgaagttgag	ttcaataacg	gaaacgttta	tgagtattat	120
gatgttcctc	tgcatgagta	tgaaggctta	atgagtgcg	attcaaaagg	cacttatcta	180
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<210> 2772

<211> 207

<212> DNA

<213> B.fragilis

<400> 2772

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ttgcgggagg	aaaagggatg	tttcgaggaa	gaatatcgcg	gaaggaattg	gggttgggag	120
agagataaac	tgaaaaacag	gtggggaatt	gacgggagtt	ggacgggaaa	tcagacgagg	180
actgaacggg	aattgaatga	aaattga				207

<210> 2773

<211> 1614

<212> DNA

<213> B.fragilis

<400> 2773

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ctctcttccg	aactcgactc	tctgaaaaaa	ggcgatttcc	gtgaacggta	cagtactcgg	180
attctagatg	cattgcctga	tatgctgact	gtttttgacc	ataatgcgaa	cattgtggag	240
ttggcttcat	ctcctacaac	aaatcatgtg	gaaggtacca	cctccgatag	tattattaat	300
tcaaatgtaa	aagatattgt	tcccgaagaa	gcgtatgaaa	gtgttcgtca	caacatggat	360
aaagtcattc	ataccggtaa	gagttcgaca	gctgaacatt	cattaatgct	ggacggggta	420
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gtacgtctca	attcgttgat	gaatgacatt	ttgaacaata	ttccccgtcta	tttattttgtg	600
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<210> 2774

<211> 441

<212> DNA

<213> B.fragilis

<400> 2774

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<210> 2775

<211> 2079

<212> DNA

<213> B.fragilis

<400> 2775

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<210> 2776

<211> 849

<212> DNA

<213> B.fragilis

<400> 2776

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caagacgaca	aaggaaatga	cttacacgga	atggcagaaa	ttatagtctc	caaaaatcgt	780
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<210> 2777

<211> 783

<212> DNA

<213> B.fragilis

<400> 2777

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<210> 2778
 <211> 1143
 <212> DNA
 <213> B.fragilis

<400> 2778
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 gataccacta cgtcgtatggc cgcttcactg gctgcattct atcggcaggt tgcctgaggga 360
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<210> 2779
 <211> 3045
 <212> DNA
 <213> B.fragilis

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 gatgtacaag ataaattgcc tgccggggct ggaacttcta tcgtaaata tgactttgga 420
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<210> 2780

<211> 369

<212> DNA

<213> B.fragilis

<400> 2780

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<210> 2781

<211> 642

<212> DNA

<213> B.fragilis

<400> 2781

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<210> 2782
 <211> 1191
 <212> DNA
 <213> B.fragilis

<400> 2782
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<210> 2783
 <211> 498
 <212> DNA
 <213> B.fragilis

<400> 2783
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 caaacctttat ccaaagctgt agtaactata attatagcat gcacagcatt gtacgcctgg 240
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 atatgcatag aacattaa 498

<210> 2784
 <211> 1206
 <212> DNA
 <213> B.fragilis

<400> 2784
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<210> 2785

<211> 258

<212> DNA

<213> B.fragilis

<400> 2785

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gaatttatca	ggtgcatagc	aacaattggc	aattcaaaaag	ataactccaa	catctttcgg	180
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<210> 2786

<211> 1020

<212> DNA

<213> B.fragilis

<400> 2786

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<210> 2787

<211> 288

<212> DNA

<213> B.fragilis

<400> 2787

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<210> 2788
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 <212> DNA
 <213> B.fragilis

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 <213> B.fragilis

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 cttctatttg attgtgaggc aatctatctc attgataatt ggcagtcttc taaggagca 240
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<210> 2790
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 <212> DNA
 <213> B.fragilis

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 caacaaatac agtcccccaa tcacctgaat gacaaacaac gggcagaata ctgctttcaa 240
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 atcccacttt tctacatgt tggagatact gcccaatggt tgcaagccca actggaacag 360
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<211> 963

<212> DNA

<213> B.fragilis

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<210> 2792

<211> 1254

<212> DNA

<213> B.fragilis

<400> 2792

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<211> 525

<212> DNA

<213> B.fragilis

<400> 2793

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<210> 2794

<211> 612

<212> DNA

<213> B.fragilis

<400> 2794

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<210> 2795

<211> 270

<212> DNA

<213> B.fragilis

<400> 2795

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tgctcaaaga	cttctttgat	ggtccagaaa	gaagagaaag	cgaatacgcc	caataaagac	180
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<210> 2796

<211> 1017

<212> DNA

<213> B.fragilis

<400> 2796

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<210> 2797

<211> 1683

<212> DNA

<213> B.fragilis

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<210> 2798

<211> 252

<212> DNA

<213> B.fragilis

<400> 2798

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ttttatcttt	ctcccttgct	tggatataaa	atttcattaa	ttttgcagca	aaacgaatta	180
aattataacc	ttttaccggg	aaaatacatt	caacattatg	gatacaagca	aaatcgtagg	240
agaaaaaatt	aa					252

<210> 2799

<211> 1047

<212> DNA

<213> B.fragilis

<400> 2799

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atcaagacaa	cggagttccc	gtttatcgca	caaccttttc	gtacctctga	gctatcgttt	180
cgtgtcggag	gccctattga	tcgtttggat	gtatatgccg	gtaaccatta	caaacaaggc	240
agtattattg	ctgaaataga	cccgcgtgat	ttccatattc	gcaaagaacg	ggctgaagcc	300
atctatcacc	aagctaaagc	tgaatttgaa	cggatagaga	agctgtatga	gaagaataat	360
gttttcggcg	gtacatatga	aaagactaag	gcggattata	ctactgccaa	aactgctttc	420
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ggagaagttt	atatagaaaa	ataccaggat	gtgaagccag	ctcagcctgt	tatatccttt	540
attgacataa	atcggttgaa	gatagagatt	tatgttactc	agaatattgc	gtttgcctca	600
cacccacacag	atagtgtccg	gatctatttt	gatgccagc	ccgataagta	ttataaggca	660
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gttttaccta	ataaagaagg	gaaattattg	gcgggtatgt	cgggaaaagc	aatccttgat	780
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acagtgaaaa	aaggaaatct	gcttcccggt	ggctatgtta	ccataaccga	aggattgagg	960
gccagtgaaa	cggtagctac	gagcggactt	cgttttttat	cggatggtat	gaaagtggaa	1020
atctctacta	agacaaactc	attatga				1047

<210> 2800

<211> 288

<212> DNA

<213> B.fragilis

<400> 2800

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taccactacg	cttcggttac	cttagaatac	cgggctatca	ccgtctatgg	cacgactttc	120
cagtcgtttc	ttctcaataa	ctgtcttgcg	agagcgtggt	cctacaaccc	cacacatgcc	180
gtaacatggg	tggtttgggc	taatccccgt	tcgctcgcca	ctactagggg	aatcattatt	240
tattttcttt	tcttgcagg	actaagatgt	ttcagttccc	tgcgttag		288

<210> 2801

<211> 291

<212> DNA

<213> B.fragilis

<400> 2801

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agaaataaac	tctatcagta	tgcacctacg	cagatgtata	tcagttgcgt	attgggctcc	180
gatggagcca	ccactaccca	acaaagagag	ggggcaatag	ccttgcttta	ctcgactccc	240
accttaatag	agcaacaggc	ttgccacaag	attgctatct	ttttcactta	g	291

<210> 2802

<211> 432

<212> DNA

<213> B.fragilis

<400> 2802

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cgtgaacctt	ctatatatgg	aagcgttaca	tttgaagagt	atgttgctga	acttcgtaaa	120
aaatatcccg	atgtggaact	gggatatttc	cagtcgaatg	ttgaagggga	aatcatagat	180
attattcagc	aaaccggatt	cgatgtggat	gggatcatat	tgaacgcagg	agcttataca	240
cacacttcca	ttgcttttgc	ggacgctatc	cgctccgtaa	cctctcctgt	aattgaagtt	300
catatatcca	atgttcatgc	cogtgagcag	ttccgccatg	tatctatgat	tgcttgtgct	360
tgtaaagggtg	ttatttgtgg	atgttgattg	aactcatatc	gtctggcact	cgaagcttta	420
ttagataaat	ag					432

<210> 2803

<211> 354

<212> DNA

<213> B.fragilis

<400> 2803

aataattacg	tagaaaaatt	tatggaaaca	acgagacaaa	acaagatata	acgtctgtta	60
cagaaagaac	tcagttagat	ttttctgttg	cagactaaag	ctatgcccgg	tgtactggta	120
tcagtaagtg	ctgtacgtat	cagtcgccgac	atgagtatag	ctcgtgtata	tcttagtatc	180
ttcccttctg	aaaagagtga	agaaatggta	aagaatatca	ataataatat	gaagtccatt	240
cgtttcgaac	tcggtactcg	tgttcgtcat	cagttacgta	tcattcctga	attgaagttt	300
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<210> 2804

<211> 1764

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1492)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2804

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tccgaaccct	gggagggaat	tttcggaaat	catcggggcg	tactgcaa	agagaagccg	180
gcacaaatcg	cgaacctcga	cttccaatgg	cggcggtccg	acaaagatgc	aggacacaga	240
cgattttctta	tcacccacgc	tgcaacggga	gataccatcc	ggaatatccg	ccggatagag	300
gtgaacgcag	aacactgccg	tttgacgttc	gggtccgggtg	aacaaaaagg	cacttactac	360
ttctactacc	tcccctacca	agtgcacaa	ggatacggat	tctacagtgg	cggatacctt	420
ccgaaagaaa	acgaaccgga	tgcagcctgg	cagggtcaag	gcgggtcaac	cctgaaaagc	480
actcggggcca	aagtggtcag	agtagagtgc	cggcaggctt	tcgacagttt	ttaccgcatg	540
gaagttgccc	caacggccc	ggagaaagag	aactacatca	accggcacia	agcctccctc	600
tacctctttg	ccgaagatcg	cagggtcccc	atccggatgc	gcagcaacct	ccctaccaa	660
tggctggcag	acaaacaggg	aaaactgttt	cgggggagaag	cagcccccaa	tgaatactat	720
actttccaga	tcgggctttg	ggcagccgtg	aaccaagcag	acaagattgc	ttaccgggct	780
tcttccctga	agtgcggccg	ggaaataata	ccggcaacag	ccattacctg	ttttaatgtc	840
gaaggtaccg	atccttacgg	aaaagcgttc	aaaaaagaag	taaacgtccc	caaaggagag	900
gtacaggctc	tctgggttcg	aatagatata	cccagcgggc	agaagggaag	catctataca	960
ggcaccatca	ccctcagcga	tgccgacgga	gcacaaagct	cgatccccct	gagtatacgg	1020
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ggactgccc	cacaaatccg	ttcatggaac	aacgacgtgc	tgagcagtc	catagagttt	1260
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acagaaggcc	atgtagcagg	caactggaaa	gccgaagacg	aagatatgac	agtcagctgc	1380
aaagcaatca	tggagtttoga	cggatggata	aactacatat	ataccatcac	ccccaaaaag	1440

cagatacaag	tgaaagacgt	ccgtctggta	ttgccgggtca	ggaatgaaat	angaacttat	1500
tttctgggca	tggggcttcc	ggggcaacct	actcctcaac	agtatgaccg	gaaatgggat	1560
gcccccgaga	aaaccgtgaa	cacttttcgga	gtgtccatcc	ccaacttcca	aagaacaaca	1620
atgggctgtg	gcccgtccac	aatttttctgg	atcgggaacc	agcatgcagg	tatttactgg	1680
caaatcaggg	gaagcacata	cagccggtcc	gctattgaat	ctgcaccgtc	cggcctatcc	1740
ggaaagctgg	ttcaacgggg	gtaa				1764

<210> 2805

<211> 1377

<212> DNA

<213> B.fragilis

<400> 2805

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tttactaacg	gtcaggagcg	gaaatataat	atggcagaac	agtcgctaaa	agaaaaaaca	120
gccaaaggat	tattctgggg	tggattcagc	aatggcatcc	agcaattact	gaacctgctg	180
ttcgggaatta	tcatcaccgg	tatgctggat	tcgacagact	acggtatgat	tggtatgctg	240
gctatatatta	ccgccgtagc	caactctata	caagagagcg	gatttacggc	cgctctggcc	300
aataaacaga	cgttccgtca	tgaagactac	aatgcgggtg	tctgggttcag	ttttctaata	360
gggtgcacgc	tttacctgct	gctctttttt	tgtgccccgt	ttatcgcagc	attctataag	420
actccacagc	ttattctctt	atcccgcttc	cttttccctg	gttttctgat	ttcaagttgc	480
ggaactgccc	ataatgcgg	attatttaaa	aaactaatgg	tgaaagaaaa	agcgaaagca	540
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gagttcatcg	taattgccgt	caccgccaaa	tggcaggcat	gtgtacccat	catgcagatt	1080
ctttgcatct	ggggagcatt	tgtccccatt	acttatatgt	actccaatct	cctgatcagt	1140
aaaggaaagt	cgaatctttt	tatgtggaat	accattgcac	agagcctgg	tcaactcaca	1200
atgcttcttt	gtactatctc	acaaggcata	ctcgctcatg	ccgtgattta	tacggttatc	1260
aacatcgggt	ggctgctgat	atggcattat	ttcgtaaaaca	agcagattca	catcacccta	1320
tgggaagtca	tgaaagatat	cactccgtac	ctactgatct	cggaggaggt	catatga	1377

<210> 2806

<211> 1320

<212> DNA

<213> B.fragilis

<400> 2806

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gttttaataa	tcaatacttc	cgaacgtttg	ggcggagcgg	ccgtcgcagc	aagccgcttg	120
atggaatcgt	tgaaaaacaa	cggtatcaaa	gccaaaatgt	tggtgcgcga	caagcaaacc	180
gaccagatca	gcgtagtagg	tctgcaacgt	aactgggtgg	aagtatggag	gtttgtgtgg	240
gaacgcattg	tcatctggaa	agccaaccgc	tttaagaaga	acaatctttt	cgcagtcgat	300
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cacctgcatt	gggtgaatca	gggaatggtg	tactgaacg	atatccggaa	gattctgaaa	420
tccggtaaac	cggtagtgtg	gaccatgcac	gatatgtggc	cctgtacagg	tatctgccat	480
cacgcccgtg	agtgtaccaa	ctaccatcag	gagtgaacc	actgtccata	cctgtatgga	540
gggggaagta	agaaagatct	gtccaaccgt	atcttccgta	aaaaacaaca	actctacaaa	600
gaagcaccca	ttaccttcac	cacttgtagc	caatggctga	agggacaagc	cgaaaagagt	660
gctttgctga	caggagaaac	agtaatcagt	atactaac	ccattaacac	caatctattt	720
aaaccagaa	acaagaaaga	ggcacgcagc	aaatgccatt	taccccaaaa	cggaaaactg	780
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tcgtgtaaat	tactggctgc	gaagcatcct	gaactgaaag	attctctaag	tgtagtcgtt	900
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tacgtgagta	acgagcatga	actggttgat	gtttacaatg	cggtcgacct	tttcgttact	1020
ccctcactgg	aagagaacct	gcccaatacc	atcatggaag	ctatggcatg	cggagtgcct	1080
tgtatcggct	tcaatgtcgg	cggcatcccg	gaaatgatag	accatctgca	caacgggtat	1140
gtggcacaat	acaaatcatc	cgaagatttt	gccaacggca	tctattgggc	actgaccgac	1200
ccggattatc	cgtctctctc	ggaacaggcc	aaccgaaaag	taatcgccaa	ctactcggaa	1260
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<210> 2807

<211> 663

<212> DNA

<213> B.fragilis

<400> 2807

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cagcatatcg	atgaggaagg	tgaataacct	aaatctcttt	atcgggatac	gcatgttaaa	120
ctcctgcgtc	ctcgtatggc	ttccgggtcat	ctgcagggac	gtatgttgaa	gatgtttgtt	180
cgtatgatac	ggcctcgcca	aatattggaa	atagggactt	atagtggcta	ttccgctctt	240
tgtctggccg	aggggcttga	ggagggcgga	atgcttcaca	cattcgagat	taatgatgaa	300
caagaagact	ttacccgctc	ctggctcgaa	aactcagctt	atgctgataa	aattaaattt	360
tatattgggg	atgctcttcg	gttaataacct	gcattgggca	ttacgtttga	tcttgctttt	420
gtggatgggt	acaaacgtaa	gtatattgaa	tattatgaaa	tgactcttgc	acatctttct	480
gtaggaggtt	atatcatagc	tgataacact	ttgtgggatg	gtcatgtgct	tgaagaacca	540
catagcaatg	atcaccagac	gatcggaatc	aaggctttca	atgagttggt	ggcacatgat	600
gaacgggtag	aaaaagtaat	tctgccttta	cgtgacgggt	tgactataat	tcgtaaaaag	660
tag						663

<210> 2808

<211> 252

<212> DNA

<213> B.fragilis

<400> 2808

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tggatggaact	acatgaaagt	tttaatgttt	aacactttga	atccgaacaa	tctttttaga	120
caaagaccat	ccggaattcaa	cctacccatg	attattttat	atattaagtt	ggattctcaa	180
aacgcaaaaa	ttgaccagaa	aacttttaata	gggcatctcc	cgtctttcca	ttacgatttt	240
tggagactat	aa					252

<210> 2809

<211> 306

<212> DNA

<213> B.fragilis

<400> 2809

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acagtttcaa	gaatgcgctc	ttccaataaa	gcgccttcct	gcgtttcttc	tccaaatccg	120
gccgaaagaa	ttatgaaagc	cgcgctctgc	ttctctgcgg	ccagtgtttc	caccacctcc	180
ggacaaagaa	ctgcaggaat	agcaagaata	gcaagatctg	tatcgggtaa	ctcctttgca	240
tccgcaaagg	aaggcactcc	ctgcacttct	gtttcttttg	gattgacagc	cgaagttct	300
ccctga						306

<210> 2810

<211> 990

<212> DNA

<213> B.fragilis

<400> 2810

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aatgtttgtgg	agacgaaaat	gaaaaaacia	ttcgaatgcgg	caaaaaatat	agtggaaaat	180
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cgtagtcaga	aacttcaact	cagatattgg	aggggtgcac	tagctgcatg	tattacggct	300
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ataactgagt	atactgaagt	tgtttcttca	aatagccggg	tgtatatact	tcccgcagct	420
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gaccctgcct	ctaaagtcac	cgaaaagatt	tgtattaata	tgaatttgaa	atttaaaaaa	960
gaaacacaga	aatcattat	ttataaataa				990

<210> 2811

<211> 273

<212> DNA

<213> B.fragilis

<400> 2811

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gctgagatac	tggattgttc	tgtctggcttc	ataggacaag	tcgaaagtga	aaactccgat	180
accaaataata	gtgtttatca	actttatctc	attgccaaag	atttcaactg	ctcaccagca	240
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<210> 2812

<211> 2499

<212> DNA

<213> B.fragilis

<400> 2812

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gccggagccg	gacaagaagc	caaagaatat	tatgagagaa	caggtgaacg	taccgctgg	180
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acatttatca	tgatgtctgg	gttctatata	ctgctaaggg	cattcggcat	accggcatgg	360
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gccggacata	tctggaaatt	tattacttta	gcctatatcc	cacctacgat	agcagggtata	480
gtacttgctt	accgaaagaa	atatctgtta	ggagggtatta	tcaccgcttt	attcatggct	540
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<210> 2813

<211> 489

<212> DNA

<213> B.fragilis

<400> 2813

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tcacgtgcgg	ccatccatca	acgcgtgcag	agactgatcg	atctgggagt	cattgtaggc	180
tctgggtatc	acgtaaaacc	gaaatctctg	ggatatcgta	cctgtactta	tgtcgggtatc	240
aaactggaaa	aaggatctat	gtataaagct	gtagtggccg	aattacagaa	aattcccagag	300
atcgtagagt	gccacttcac	aaccggccct	tacaccatgc	tgaccaaagt	atatgcacgc	360
gacaacgaac	acttgatgga	cctactgaac	aacaaaatgc	aagagatacc	gggagtaacc	420
gccaccgaga	ccctgatttc	tctggagcaa	agcatcaaga	aagaaattcc	tattcacgca	480
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<210> 2814

<211> 1254

<212> DNA

<213> B.fragilis

<400> 2814

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gcagggtctac cttactttgt ttttatttca ccggatggga aaattatctc tcgtgacttt 1200
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<210> 2815
<211> 387
<212> DNA
<213> B.fragilis

<400> 2815
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tatcccttca acttaatcac ctgtccgtcg gctacaccgg ccggtatcgt aatacgaacc 180
tgtttgccat tcacattcaa cacctgtttg tgggtccggg ccgcatcgcg aagagacagg 240
tgcaattctg cattaaaatc ttgtcctcgg aagcctgcat tgctcgtcc gctcctcct 300
ctatgtccga acatagattc aaagaagtcc gagaatcctc cggcatcacc acccgagaac 360
ccctctccat cggacgagta ccaataa 387

<210> 2816
<211> 1908
<212> DNA
<213> B.fragilis

<400> 2816
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cggttgggag gaacgatcgg agtggagact cgggaaggaa agggttcctg cttctggttc 1860
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<210> 2817
<211> 234
<212> DNA

<213> B.fragilis

<400> 2817

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aagaccctgg	tagaagtatt	gatggggagc	accccggttg	cgcaaaatta	ccaaagggat	180
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<210> 2818

<211> 3201

<212> DNA

<213> B.fragilis

<400> 2818

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acgcaagcaa	cagaagtatt	ggttcctgaa	gttactcaag	agaaagtgc	aggaacagtt	180
gaagatgcat	tgggtccggt	tattgggtgcc	agtgatcatg	taaaaggcac	gaccaatggt	240
gtcattacgg	acttagaagg	taagttctcg	ctgaatgatg	tgaaaaagg	agatattatt	300
gtaatatctt	acatcggata	cgttacacaa	gaaatacctt	atacaggaaa	acctattcaa	360
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<210> 2819

<211> 207

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1)

<223> Identity of nucleotide sequences at the above locations are unknown.

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tcttcaggag	tacatcatat	agaaaacggg	gaaaccgtaa	aaactctgcc	tgaaatcact	180
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<210> 2820

<211> 621

<212> DNA

<213> B.fragilis

<400> 2820

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aggtatcagc	ataatgtgat	taatgcctat	atcaattcca	tccgttatac	cgacgatttt	180
ctgtcaaggc	tgatcgtcgt	gctgcagcaa	caggatgctg	ggtcggatat	actttatact	240
tcggatcatg	gagaagatat	ttgtgacgac	cattgtcatc	tcttcgtgca	tgcgctctcc	300
gtgcattcca	aatatcagtt	gcattgtacc	ttcattgtat	ggacttcgga	cacctatcgg	360
gagaagtatc	ctgagcatat	ggacgctata	cagaagaatc	gtcacaaatc	tggtgtttcg	420
aaccgggttg	tggtccattc	ggtactcgat	ctggccgggg	tgaccaccac	ctatgtaaac	480
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cacaacgagc	cgcgttcgta	cgatgacatc	gggttacgta	aagaggactt	tgagatgttc	600
ggaaagatgg	ggatacgttg	a				621

<210> 2821

<211> 201

<212> DNA

<213> B.fragilis

<400> 2821

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gcccttaggg	cccggttacc	cttcggaaag	ctttgggatt	tgggtatccg	gatcaataac	180
cggaccttcc	agccattttg	a				201

<210> 2822

<211> 849

<212> DNA

<213> B.fragilis

<400> 2822

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gctcttttga	cgataaagtc	acctgcaaag	gaaatagaat	caacaaacag	agggatttta	120
tcagtaatta	tctatctttg	cagcccgaag	aagataccta	tcagcaatat	gaagaaaata	180
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ctgtgtctca	acaactatct	ctatcaaagc	gaaaacgagc	ctttcaaata	ctttcactat	480
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gagcgtgcct	ggtcacagta	ttgtgaattc	agttacccat	tcacagtaaa	gggagtagac	660
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gtcaatgtcg	gactttcggc	taccaagacc	ttgaatatct	cctccggatt	tactccggcc	780
atctttggca	aactgatagc	aaacccttac	gagaaccggg	tctacttcgt	tttcgggata	840
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<210> 2823

<211> 930

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (63), (64), (65)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2823

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ggacaaataa	tttcgacatt	caataaatgt	ggtatcttct	attgtcaacg	cggcagtgtg	180
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taccagcatc	tgaactgga	actgataaaa	tcgatgggac	agactatctg	ctatgaaatc	540
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gtctttcaga	atctcatgct	gtctctgttc	cgtttctatc	gcaaggaacg	tgacgtctct	660
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<210> 2824

<211> 2265

<212> DNA

<213> B.fragilis

<400> 2824

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tatcagatga	gtaaaactgga	ggatccggaa	ataaaggtaa	aacttgccat	ggtgggtcacc	180
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<210> 2825

<211> 231

<212> DNA

<213> B.fragilis

<400> 2825

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gaaatgtatt	gggaaactcc	ctctccctat	cgggtaaacac	ctttccttcc	ggatagcggc	180
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<210> 2826

<211> 762

<212> DNA

<213> B.fragilis

<400> 2826

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<210> 2827

<211> 1707

<212> DNA

<213> B.fragilis

<400> 2827

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<210> 2828

<211> 246

<212> DNA

<213> B.fragilis

<400> 2828

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atctgcttta	tgtcatttga	tttgtactta	atgtgttgta	atataatgat	ctatggattt	120
aagtctaatg	tgaatcaggg	tttgttgctg	aagagagacg	ttataggctt	attgaagaat	180
gaagagataa	tttcgaataa	aatattcaat	atTTTTataa	acgaagagct	ggatttatta	240
tattaa						246

<210> 2829

<211> 954

<212> DNA

<213> B.fragilis

<400> 2829

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------------	------------	------------	------------	------------	------------	----

tctcaggatg	atattaaaaa	ggctttccgt	aaattggccc	gtaaatatca	tccggacctg	120
aatcctaattg	acccaagcgc	taaggataag	tttcaggaga	ttaatgaagc	taacgaagta	180
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<210> 2830

<211> 1035

<212> DNA

<213> B.fragilis

<400> 2830

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gaaagcggta	tcattcatctc	tatcaacaac	gatccgtcag	ctccgatcaa	tacgattgca	960
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<210> 2831

<211> 1887

<212> DNA

<213> B.fragilis

<400> 2831

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gactggcaga	aaatggaaac	gtatgctttc	gttcactttg	gtctgaacac	cttcaacgac	180
cgggaatggg	gatacggcga	ttcggaaaccg	aaaacgttca	atccaaccaa	actggactgt	240
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<210> 2832

<211> 213

<212> DNA

<213> B.fragilis

<400> 2832

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gctgacacaa	atcttggtta	tatatctgt	aaatctttcc	ttatagttat	ctcccaccgg	180
tatatatata	ttcttattga	aatgatgcg	taa			213

<210> 2833

<211> 189

<212> DNA

<213> B.fragilis

<400> 2833

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cagatttata	aggatataca	cttacaggca	accgaaatcc	ctgtattgcc	ctataacaatc	120
tgttcatctg	tgataaactt	ccggcacatg	ctcaaaaaga	gcttcaccaa	cctaactacc	180
ggtcattaa						189

<210> 2834

<211> 1308

<212> DNA

<213> B.fragilis

<400> 2834

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ataatgaaaa	agacaatcct	cctggccgct	ttaggcctga	tcagtctgag	tgcatggggc	180
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<210> 2835

<211> 189

<212> DNA

<213> B.fragilis

<400> 2835

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gaaatgtaa						189

<210> 2836

<211> 753

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (719), (720)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2836

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<210> 2837

<211> 972

<212> DNA

<213> B.fragilis

<400> 2837

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<211> 234

<212> DNA

<213> B.fragilis

<400> 2839

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<210> 2840

<211> 1221

<212> DNA

<213> B.fragilis

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<213> B.fragilis
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 <212> DNA
 <213> B.fragilis

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<210> 2844
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 <212> DNA
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 <213> B.fragilis

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<210> 2846
 <211> 1041
 <212> DNA
 <213> B.fragilis

<400> 2846
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<211> 285

<212> DNA

<213> B.fragilis

<220>

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<222> (156)

<223> Identity of nucleotide sequences at the above locations are unknown.

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<210> 2848

<211> 2493

<212> DNA

<213> B.fragilis

<400> 2848

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<211> 744

<212> DNA

<213> B.fragilis

<400> 2849

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<211> 570

<212> DNA

<213> B.fragilis

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<211> 1680

<212> DNA

<213> B.fragilis

<400> 2851

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<211> 3027

<212> DNA

<213> B.fragilis

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<211> 936

<212> DNA

<213> B.fragilis

<400> 2853

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 <213> B.fragilis

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<210> 2856
 <211> 204
 <212> DNA
 <213> B.fragilis

<400> 2856
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 <212> DNA
 <213> B.fragilis

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<211> 1179

<212> DNA

<213> B.fragilis

<400> 2859

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<210> 2860

<211> 2115

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1399)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2860

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ggcctaaaaa	ccatctatca	atcgggagtc	gtatcgacag	aagagatgcy	gaccctcctc	480
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atgctttacc	tggaaactgtt	ccgcaaagat	tattatgaac	gcaaaggcag	cttatcggtg	960
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tcgcaagtac	aagaggggta	tttcaaagaa	tgcccgatca	cattcaaaga	catcgcgacg	2040
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<210> 2861

<211> 324

<212> DNA

<213> B.fragilis

<400> 2861

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tatttttgcg	gtaagataat	gcgtggagga	ggattcggcc	ttttgggtcaa	tctcttatta	180
gggattatag	gcggtgtgct	ggcggttg	gtgtttgcc	ttctgggact	ggcagcaacc	240
ggaattatcg	gtagtctgat	tacttcggtt	gtcggcgcca	tcttatttct	ctggatagcc	300
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<210> 2862

<211> 552

<212> DNA

<213> B.fragilis

<400> 2862

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gtgttcaatg	accagaaggt	ttctaaattt	gtaaacatc	tgatgtatga	tggaaagaag	180

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gaagaaaaaa	ctgctcttga	aatctggaag	aaagcgtag	ataacgtaac	tcctcaagtt	300
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gatcgtaaag	aatcaatctc	aatgaagaac	ctgattctgt	tcgctcgcaa	gagaggtggt	420
aaatctatgg	ctgataaatt	ggctgctgaa	atcatggatg	cattcaatga	acaaggcggg	480
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<210> 2863
 <211> 486
 <212> DNA
 <213> B.fragilis

<400> 2863						
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tcgtccacag	aaggggaaat	catcacacaa	tctcaccgga	cggatgaatgc	aaaaaggatc	180
ccgatttctt	tttcgtatga	aggaggcatc	acactcgaca	cggaaacatt	acactatagc	240
agcccaagtg	agaagtttgc	aacaacttgg	aaaaatatat	tatttcacac	catttctatc	300
agaataatta	tcggactcca	taaaagtaat	atggaaccgt	ccgagtggag	agaaatcatt	360
caccagaaca	catatcagaa	atttcaccgc	aaacatagaa	ggcgattgcc	attatcattc	420
cgtgaacggt	atacacaata	caaaaacaag	gcttcgcagc	cattcaacca	agacgctcca	480
aagtaa						486

<210> 2864
 <211> 444
 <212> DNA
 <213> B.fragilis

<400> 2864						
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accgcagtct	tcttcattaa	taatcacatc	atgcgaaacg	tcaaccagac	gacgagtcaa	180
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<210> 2865
 <211> 504
 <212> DNA
 <213> B.fragilis

<400> 2865						
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agcaccatca	aggatacgaa	gtga				504

<210> 2866
 <211> 420
 <212> DNA
 <213> B.fragilis

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gcagaaatgt	tcggttacgt	aaccgcgttg	cgtactatca	cttctggtcg	tgccacttca	2040
tcaatggtat	actctcatca	cgtcagggt	tctagctcta	ttgctaaagc	ggtattggaa	2100
gaagtaaaag	gacgtgctga	tttactctaa				2130

<210> 2869

<211> 318

<212> DNA

<213> B.fragilis

<400> 2869

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ggaccgatcc	cccttccgac	gcacaagcgt	atctttacag	taaaccgctc	tactttcggt	180
aacaagaaat	caagagagca	gtttgaactt	tcttcattca	agagactgat	cgatatctat	240
agctcaacag	ctaagactgt	agatgctctg	atgaagttag	agttgccgag	tggtgtagaa	300
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<210> 2870

<211> 264

<212> DNA

<213> B.fragilis

<400> 2870

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aatgctcttc	atgaaataga	ggctgatgcc	gaactggcag	tagtcgaagc	aaaagacaaa	180
gccgtgaagg	ctgggtgcaa	agtagccgga	aaagtagctg	ataaagcgac	tgaggtgaaa	240
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<210> 2871

<211> 1149

<212> DNA

<213> B.fragilis

<400> 2871

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gatgccaatc	gggaatcggt	cttaacagga	gtgtttttgg	gaagcctgat	gcgcccgtgt	180
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<210> 2872

<400> 2872

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<211> 333

<212> DNA

<213> B.fragilis

<400> 2873

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<210> 2874

<211> 378

<212> DNA

<213> B.fragilis

<400> 2874

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ccgaagagac	acttggccga	gttcaaggaa	tttgaaaacg	agttaaatct	gggtgatact	300
gttacagtag	aactgttcga	cggcgcagac	tatgtagacg	ttgttggact	tctaaaggta	360
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<210> 2875

<211> 195

<212> DNA

<213> B.fragilis

<400> 2875

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<210> 2876

<211> 831

<212> DNA
<213> B.fragilis

<400> 2876
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<210> 2877
<211> 429
<212> DNA
<213> B.fragilis

<400> 2877
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<210> 2878
<211> 288
<212> DNA
<213> B.fragilis

<400> 2878
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 aacatagccc gtttggtttg ttcgcgcaag gtgtcggtgc cgaacatgtt gagcgggaaac 240
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<210> 2879
<211> 399
<212> DNA
<213> B.fragilis

<400> 2879
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<210> 2880
 <211> 1488
 <212> DNA
 <213> B.fragilis

<400> 2880
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<210> 2881
 <211> 2367
 <212> DNA
 <213> B.fragilis

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<211> 183

<212> DNA

<213> B.fragilis

<400> 2882

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gttcggctga	gccttaggac	ccgactaacc	ctgatccgat	tagcgttgat	caggaaacct	180
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<210> 2883

<211> 207

<212> DNA

<213> B.fragilis

<400> 2883

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actggtttga	ctaccgctcc	gacagaagcc	atatcaggaa	ctccaagttc	aattttaagt	180
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<210> 2884

<211> 264

<212> DNA

<213> B.fragilis

<400> 2884

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tctacttcta	aggcaacgaa	tcattcatcg	aatgaagatc	gtgattttaca	ttctccagaa	180
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<210> 2885

<211> 270

<212> DNA

<213> B.fragilis

<400> 2885
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ggcggaaagta aagttcctgg catgccttag 270

<210> 2886
<211> 780
<212> DNA
<213> B.fragilis

<400> 2886
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<210> 2887
<211> 309
<212> DNA
<213> B.fragilis

<400> 2887
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<210> 2888
<211> 588
<212> DNA
<213> B.fragilis

<400> 2888
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<210> 2889

<211> 1296
 <212> DNA
 <213> B.fragilis

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<210> 2890
 <211> 192
 <212> DNA
 <213> B.fragilis

<400> 2890
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 taccatacag tatgcggcgc ttgcggatac tatagaggta agctggcaat tgaaaaagaa 180
 gctgctgtat aa 192

<210> 2891
 <211> 2187
 <212> DNA
 <213> B.fragilis

<400> 2891
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<211> 1197

<212> DNA

<213> B.fragilis

<400> 2892

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<211> 1275

<212> DNA

<213> B.fragilis

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<211> 939

<212> DNA

<213> B.fragilis

<400> 2894

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<213> B.fragilis

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<212> DNA

<213> B.fragilis

<400> 2896

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<211> 1242

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<213> B.fragilis

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<213> B.fragilis

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<212> DNA

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<210> 2903

<211> 228

<212> DNA

<213> B.fragilis

<400> 2903

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ataaaaaccg	gaattgcaat	aactttttct	ctttttttgt	atacgaaacc	tatgaatttt	180
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<210> 2904

<211> 1377

<212> DNA

<213> B.fragilis

<400> 2904

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<210> 2905

<211> 795

<212> DNA

<213> B.fragilis

<400> 2905

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<210> 2906

<211> 612

<212> DNA

<213> B.fragilis

<400> 2906

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<210> 2907
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 <212> DNA
 <213> B.fragilis

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<210> 2908
 <211> 1560
 <212> DNA
 <213> B.fragilis

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<210> 2909

<211> 1884

<212> DNA

<213> B.fragilis

<400> 2909

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<210> 2910

<211> 1716

<212> DNA

<213> B.fragilis

<400> 2910

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<210> 2911

<211> 324

<212> DNA

<213> B.fragilis

<400> 2911

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<210> 2912

<211> 210

<212> DNA

<213> B.fragilis

<400> 2912

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<211> 1020

<212> DNA

<213> B.fragilis

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<210> 2914

<211> 393

<212> DNA

<213> B.fragilis

<400> 2914

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ttttatttcat	tttttatcat	tttcaactatg	aacattttatg	ttggaaacct	tagctaccgt	180
gttaaggaag	cagatctgca	acaagttatg	gaagactacg	gaacagtaac	ttcttgcaaa	240
gtaatcatgg	atcgcgaaac	aggcaaatca	aaagggttctg	gtttcgtaga	aatcgctgac	300
gatgcagccg	gtgcaaaggc	tatcgccgaa	ttgaacggag	ctgaatacga	aggtcgtacc	360
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<210> 2915

<211> 189

<212> DNA

<213> B.fragilis

<400> 2915

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gaagcagtta	gctcttcttt	gttaataaat	gacatttggg	gatactatgt	gttctacttg	180
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<210> 2916

<211> 774

<212> DNA

<213> B.fragilis

<400> 2916

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<210> 2917
 <211> 675
 <212> DNA
 <213> B.fragilis

<400> 2917
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<210> 2918
 <211> 1368
 <212> DNA
 <213> B.fragilis

<400> 2918
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 cagaaagctc aggttccggg attccgtccg ggtatggttc ccatgagctt ggtgaagaag 180
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 ctggtaaacc gcgtagtaga aaccaaattg gccgctgcac tgaaaggcaa gggtacattg 1320
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<210> 2919
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 2919
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gtggctctga cactagtacg agaggaccgt gttggactga cctctggttt accggttgtg 240
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<210> 2920

<211> 243

<212> DNA

<213> B.fragilis

<400> 2920

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tacaaattat cagtaaatat tcgtatttta aatagtattt tatttataac ccgctttccc 180
tactcccagg gtcagagtag aaacagggca gcccggcgct ccctttcctt ccccccgta 240
taa 243

<210> 2921

<211> 291

<212> DNA

<213> B.fragilis

<400> 2921

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gctgatataa agcaaacatt caatagtgtt gactatgtag gtaatgatag atttgccttt 180
aacatcaaag gcaatgatta caggctgggt gctatgattt tgtttgctgc taaaaaagtg 240
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<210> 2922

<211> 783

<212> DNA

<213> B.fragilis

<400> 2922

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ggttcgggaa agactgtact gatgaaatgt atcgtcggat tgctgacacc ggaaaaagga 180
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gataatgtta tgtttcgcgt caacatgttc ggcacgcgca ccttgccgca acaaaccaaa 360
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gaatgggagg gcacaaaaga tgacattttc acatccacca acgaacagtt gaataacttc 720
attttcgctt ccgacctgct gcgtaaagta aaggatgtag aaatacaaaa cctcgaagga 780
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<210> 2923

<211> 255

<212> DNA

<213> B.fragilis

<400> 2923

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tatactacga catgggtgtt gagacgctgg gcgatcttct tctcgatgcc atcgaatgca 180
ccaccacaaa tgaaaaggat gtttttcgtg tttacgggaa tcatcttctg gtcgggggtgc 240
ttgcgtcctc cctga 255

<210> 2924
 <211> 1233
 <212> DNA
 <213> B.fragilis

<400> 2924
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 aatatacctt tttattctgt cgattttactg gaaatggaga aaatgaaagg ggaagaaata 180
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 <212> DNA
 <213> B.fragilis

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 attagattgg acaataggga tgaggcgctt attaaaacct atccatatgg tgtatatgtg 240
 ccgataaatt atattttggt gcgacctgct gacgttgat ctctgttaa gctattttacg 300
 cgcaagggac gatattgtggc tgatattggc ggagttagtc aaggcccggt agagtattta 360
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<212> DNA
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 ggtgttagtt ctaaggcaag taatttagag ggtaataagg attgcgata ccctttatct 180
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 gcggggatat aa 252

<210> 2927
 <211> 504
 <212> DNA
 <213> B.fragilis

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 gattgttctg ttttctcgat ttcagatgat tatataactg tcgcaagtgg tgttgataat 300
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 ggatctgctg aagagtacag ttctataacc gcatgggatg ccgattttgg catgcaagaa 420
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<210> 2928
 <211> 807
 <212> DNA
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 <211> 1257
 <212> DNA
 <213> B.fragilis

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<210> 2930

<211> 741

<212> DNA

<213> B.fragilis

<400> 2930

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<210> 2931

<211> 420

<212> DNA

<213> B.fragilis

<400> 2931

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gaggttactg	tacgtattct	ttcagagaag	gggatattgt	attcttcttg	tataaattcg	300
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<210> 2932

<211> 1380

<212> DNA

<213> B.fragilis

<400> 2932

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<210> 2933

<211> 972

<212> DNA

<213> B.fragilis

<400> 2933

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<210> 2934

<211> 1905

<212> DNA

<213> B.fragilis

<400> 2934

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<210> 2935

<211> 711

<212> DNA

<213> B.fragilis

<400> 2935

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cgtattatta	ttagtactat	gcatgaggaa	atctggatta	tcaatcgttt	gattcggccag	360
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<210> 2936

<211> 1233

<212> DNA

<213> B.fragilis

<400> 2936

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<210> 2937

<211> 1620

<212> DNA

<213> B.fragilis

<400> 2937

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<210> 2938

<211> 384

<212> DNA

<213> B.fragilis

<400> 2938

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384

<210> 2939

<211> 663

<212> DNA

<213> B.fragilis

<400> 2939

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<210> 2940

<211> 1422

<212> DNA

<213> B.fragilis

<400> 2940

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<210> 2941

<211> 1296

<212> DNA

<213> B.fragilis

<400> 2941

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<210> 2942

<211> 867

<212> DNA

<213> B.fragilis

<400> 2942

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<211> 1542

<212> DNA

<213> B.fragilis

<400> 2943

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<211> 810

<212> DNA

<213> B.fragilis

<400> 2944

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<210> 2945

<211> 252

<212> DNA

<213> B.fragilis

<400> 2945

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<210> 2946

<211> 303

<212> DNA

<213> B.fragilis

<400> 2946

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<210> 2947

<211> 852

<212> DNA

<213> B.fragilis

<400> 2947

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<211> 198

<212> DNA

<213> B.fragilis

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<210> 2949

<211> 195

<212> DNA

<213> B.fragilis

<400> 2949

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<210> 2950

<211> 2379

<212> DNA

<213> B.fragilis

<400> 2950

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<210> 2951

<211> 852

<212> DNA

<213> B.fragilis

<400> 2951

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 <211> 1044
 <212> DNA
 <213> B.fragilis

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 <213> B.fragilis

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<211> 1440

<212> DNA

<213> B.fragilis

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<211> 564

<212> DNA

<213> B.fragilis

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<211> 183

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

<400> 2961

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<211> 2046

<212> DNA

<213> B.fragilis

<400> 2962

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<210> 2963

<211> 1269

<212> DNA

<213> B.fragilis

<400> 2963

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<210> 2964

<211> 258

<212> DNA

<213> B.fragilis

<400> 2964

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tatcataatt ctatttgttt agagtggaa aatgcagaaa tcttttcggg aactgccaag 180
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258

<210> 2965

<211> 759

<212> DNA

<213> B.fragilis

<400> 2965

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<210> 2966

<211> 267

<212> DNA

<213> B.fragilis

<400> 2966

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<210> 2967

<211> 1389

<212> DNA

<213> B.fragilis

<400> 2967

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<211> 603

<212> DNA

<213> B.fragilis

<400> 2968

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<210> 2969

<211> 732

<212> DNA

<213> B.fragilis

<400> 2969

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<211> 2304

<212> DNA

<213> B.fragilis

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<210> 2971

<211> 960

<212> DNA

<213> B.fragilis

<400> 2971

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<210> 2972

<211> 618

<212> DNA

<213> B.fragilis

<400> 2972
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<210> 2973
 <211> 825
 <212> DNA
 <213> B.fragilis

<400> 2973
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<210> 2974
 <211> 903
 <212> DNA
 <213> B.fragilis

<400> 2974
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<210> 2975
 <211> 828

<212> DNA

<213> B.fragilis

<400> 2975

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gctatggcgg	tgataatggt	atggagcgga	tatttaagtt	accgggcagt	aggtaaat	180
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<210> 2976

<211> 861

<212> DNA

<213> B.fragilis

<400> 2976

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<210> 2977

<211> 1962

<212> DNA

<213> B.fragilis

<400> 2977

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<210> 2978

<211> 600

<212> DNA

<213> B.fragilis

<400> 2978

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<210> 2979

<211> 498

<212> DNA

<213> B.fragilis

<400> 2979

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<210> 2980

<211> 4557

<212> DNA

<213> B.fragilis

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ggtctggtac	tgcgtaaacg	tatcgacaga	ttgggtgagt	tatttatttt	ccgtaaaaag	4500
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<210> 2981

<211> 228

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (58), (74)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2981

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tttcaaaaag	cgggtgcaaa	gggaaaagg	gttaatttta	aacctgccaa	agtttttggg	180
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<210> 2982

<211> 906

<212> DNA

<213> B.fragilis

<400> 2982

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tgtaagtcgg	gacaaaagaa	agatggaac	atggaaaaag	aaactgtatt	gaagattgag	180
acctctatgg	gggatataca	agtaaagt	tataatgaga	ctccgaaaca	tagagataat	240
ttcattaaac	tggctaaaga	cggaaacat	aatggaacgt	tgtttcatcg	tgtcataaaa	300
gactttatgg	tgcaagcggg	tgatccggaa	tcgaaaaatg	ctccgaaagg	taagatgttg	360
ggttccgggtg	atgtagggtta	tacggttccg	gctgaatttg	tatatccgaa	gtattttcat	420
aagaaaggcg	ctttgtctgc	tgcccgacag	ggagatgaag	tgaatcccaa	gaaagagtca	480
tccggttgc	aattctatat	tgttaccgga	aaagtgttca	atgattcgac	acttctgaat	540
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cacatgaaag	aaatctataa	aatgcgtaag	gccaatgac	aggacggact	ttatgcttta	660
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actcctgagc	aaataaaaagc	ttatacaacc	gtcggaggta	ctccgcattc	ggatgggtgaa	780
tatactgttt	ttggcgaagt	tgtcgagggc	atggacattg	ttgacaaaat	ccagcaggta	840
aaaacagacc	gcagcgatcg	cccggaaagag	gatgtgaaga	ttattaatgt	ttctgttatt	900
gaataa						906

<210> 2983
 <211> 387
 <212> DNA
 <213> B.fragilis

<400> 2983
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 cctataaaac aaattattca aagcagtga acttcctata taaaacccat tcattcgctt 180
 gaatcgccctc ttttgcaagg ctccgtgccc ccaagggatg ccgagatacc cacctcttcc 240
 aataaccggt atataggaca agaaaaggct atcggatttc ccatagccat ctccattaag 300
 aaagtgttat ccggaggggc gctccctttc ctccgcccc tgtataaaac aagtcatccc 360
 ctccggtctt tcgaccgaag gggatga 387

<210> 2984
 <211> 1002
 <212> DNA
 <213> B.fragilis

<400> 2984
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 cttgctgccg gcatgggcag ccgttacgga ggcttgaaac aattggacgg actgggtccc 180
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 aaagacgtca tcaaagaacc gtttgccgtt atcaatgctg acgacttcta cggacgcgac 480
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 tgtgagacaa atgcggaagg ctatctgact acagtggtag aacgcactgc aatcgagcgt 660
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 actccggttt caatgaatat gtggggattc actcccgaat atttcgctta ttcggaagag 780
 tatttcaaag agttcctgaa agaaaacgaa ggaaacctga aatcagaata cttcattccg 840
 ctgatggtaa acaaactggg gaacgaagg actgcccgcg taaaggttct ggatactaca 900
 agcaaatggt tcggcgtagc ttatgctgcc gaccgtcagg gtgtagtaga taagattcag 960
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<210> 2985
 <211> 771
 <212> DNA
 <213> B.fragilis

<400> 2985
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 aaagaagaca aaatcctggg attagaaagc gccggaaacc tgacgctgtc cgatgtactg 120
 gatgaaatga agaaagaaga taccggcttg cgggcagaga ctttaaagca tgccgtcgac 180
 ctctttcagc gtacagtatc ggaattggta ctgaacggat actctgtcaa tacggggcta 240
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 aattctatct atgtttcctt caatcaggat aaggatttac gtgaaactat cgcacggacc 360
 ggagtaaaga ttctgggagc caaagggtgac tcggcctact tcatcgggtg tgaagacgcc 420
 gccacccgtg ctacggacgg tagtgcaact gcgggacgta actatcgtct gcaaggaaaag 480
 aatattaaag taactggtac agatcctgcc gtaggtatcg tcttgattga tgaaaaaggc 540
 acggaaacga agctaccgat ggatatgata gcagtaaaca acccttcgga agtattgggt 600
 ctacttcttg ccgacttgaa agacggaatc tatgagctgc gactgactac acaatactgc 660
 cacagttcgc agacaatgct aaaaacgccg agaactgtca gtcgatttat caatatcggc 720
 gcatcccagg ggagtggtag tgacgatatt gtagatgac caacggcctg a 771

<210> 2986

<211> 2181
 <212> DNA
 <213> B.fragilis

<400> 2986
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 atgaagcgtg attccgtgtc cggcaaacgt atccggttta taggtatcga cgggggtatat 180
 ggtgacggtg ccggattgca agccgtagcc gatgagaagt tggaagcctc gtccagttac 240
 cctaccggag gtgctatttc cattcagggtg gccatgcaga ttattaatgg agaaaagggtg 300
 aagaaaaact atgtattgaa cactgccatt atcaatcggg ggaatgcgaa gaccattttg 360
 gcacagtccg aacaactcaa ccactaccag aaaagaatca accggcagaa gcaggaagaa 420
 gataatttat tgtctcgttt caagttcctg cgcaactcta ctatcctgat tttggcattg 480
 atgttgctca ttatcccttt gctgggatat gtaatgtaca tgaacctccg ggtaaaaaat 540
 aagaataaag aactgcatga taaaaatcag cttgtagaag ctcaaaaaga agaactggct 600
 gtcaagaata gccagattga gaatatctcc aaccagaaac tacaattttt taccaatatc 660
 tcccatgaaa tccgtactcc tcttacctg atacttggac cgggtcaataa attgataaag 720
 aactccaagc tcgatccctc tattcaagaa gacgtggctt tgatgaaacg gaatgtagac 780
 cggctctaca ggattgtcaa ccagatactc gatttccgaa gaatcgacaa cgataagatg 840
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 gacgagttgt tcagggacaa gctgctgagc attgtcgaca cgcaatatga aaactccgat 1920
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 atgaaaacac tgttccgggt ttccccacc gattacctga ggaattaccg gctcaataaa 2040
 gcaatgcttt tgcttaaagc ccggcagtac aatatcagtg agatagctta tatgaccggt 2100
 tttacttcgc ccgctatttt cactaaatgt ttccgtacac tttatggggt cactccgaca 2160
 gaggcaatgg tggctaactg a 2181

<210> 2987
 <211> 1611
 <212> DNA
 <213> B.fragilis

<400> 2987
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 ggggatactg ccgacgagtt aatccccatc catatcagtc tgacagggtg caacgactat 180
 cattcttctt ctttttaacaa cgcttcgacc cgtagccact ctcccctgat cgccgaatgg 240
 gtgggggtaa aagctttctc acctacacgc acaggagagc aaccggacta tgacgggtcca 300
 cggatagcct cgatggaaact gacggaagat accctgcccc gtgtaagtac ccgtgcaaca 360
 gtgcctgcgg gagtctatatt ccggctgatt gtttttcgga agtccgaaa taactatgtc 420
 ttccagtcgg ttgccgatta cgctccaat ggtacgggca ctctgtact caaacaaggg 480
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 gctgccgact tgggaactat gctttccacg tatgcctaca acagcagcac agtgtctatc 600

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gggggaaact	ccacatcatg	gaagatcggc	ccttcgacca	atgtggtggc	caccaacacg	840
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tttgccagggg	ccagaacgat	aacagtgcac	ttcaatacac	tgacggtagg	cggacggatt	960
gtgaacaaca	acaccgaaat	cacgtccacc	caaagcgtac	agttgaagga	agggaaaagc	1020
tatacactaa	aaatacagtt	taaaaaggga	cccgccatca	atgtgttgga	gagtgatata	1080
aaccttacag	gtaacgggtg	tacggctcag	gataagaagg	atctggctaa	attaatatgg	1140
gcggacggga	atctgaaatc	aacaggaaat	tctaactatg	tgtggaccac	ttcaacagat	1200
agagggttatt	actatacttg	gtatagtact	tacacaggaa	atacaagcca	aaataatacc	1260
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acagagaaat	attatcgttt	tttgtttgga	acaaatggac	acacagtttc	cgacgcagct	1560
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<210> 2988

<211> 222

<212> DNA

<213> B.fragilis

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ttaattatca	gtcattttatc	tatcctcctt	gcatttagtg	cggagagtaa	aaatagtgtt	180
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<210> 2989

<211> 330

<212> DNA

<213> B.fragilis

<400> 2989						
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ggaaccatgc	gtatggttgt	acttagggcc	gtgctcggac	tgaatgccgc	cgtattattc	180
gtgttggtgg	ccaccacatt	ggtcgaaggg	ccgatcttcc	atgatgtgga	gtttccccc	240
tgctttacat	atacaccctg	gcaattgggtg	atcgtattgc	ttggaaatcc	ggtaggactg	300
atggtaattg	tcagtttgca	caacttctga				330

<210> 2990

<211> 375

<212> DNA

<213> B.fragilis

<400> 2990						
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tcggacatat	tgaaaacggt	attggaacct	acaatgaacg	aactgattat	tctgggaggt	300
attgtcgttg	taagaaccat	attatcggtg	ttcctcaaca	aagaaatcaa	agaattggaa	360
acagaaaata	actaa					375

<210> 2991

<211> 1296

<212> DNA

<213> B.fragilis

<400> 2991

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agatgcagca	gtatcttcgg	atatacagttc	agcgagatag	tccgttcgct	gatgagcggt	180
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gacaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
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cctgccaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
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<210> 2992

<211> 231

<212> DNA

<213> B.fragilis

<400> 2992

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actcttaccg	gccagccggc	aacaaatatg	tatgacgact	ggagtgaaga	gatggaagac	120
cgtgcagaca	atgtgtatga	tgataccaaa	aagaaatctg	ccggcaacaa	aaagtcaaag	180
gagaagaagc	tcaaggagat	agatgaagta	gtaaaagagg	atcttgagta	a	231

<210> 2993

<211> 2064

<212> DNA

<213> B.fragilis

<400> 2993

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acactatttg	taaaaacaag	aaccggaatg	atacgacatt	attttaaaat	cgctttccgc	120
aatctgctga	aatataaaac	ccaaagtatt	atcagcatta	tcggactagc	tgtaggaatc	180
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cgttcgttgt	tgcattgct	atctgtcgaa	tacctgattg	tcttgctagc	cggttctctg	1080
ctgggcatgg	ctttcatcga	ggcctgctta	ccccatttca	tagaactggc	tcagatatca	1140
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<210> 2994

<211> 252

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (24)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 2994

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ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcaccogt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 2995

<211> 2514

<212> DNA

<213> B.fragilis

<400> 2995

ttctctctta	atatcttaat	aagcaagagg	ttaaaattct	ttcagactct	gtgttactcc	60
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ctggcacgtt	tcagaacata	tacattcatc	aatatactgg	gcttggcctt	gagtctggct	180
tgtgtactta	tcatectccg	gtatatccat	caggagggtta	ccgtaaatca	tttctgcaaa	240
gaccttgaaa	acacctatct	gctatatatc	gagtacgaag	atggaaggcg	gacaataagc	300
agtaatgaag	ataggaataa	cgaccccaac	tttatcgatc	cgctgaacga	cccgtctgtc	360
ctgaaaagta	ccgatggat	taactttccg	gaagacagga	ttacagttag	gaaacagata	420
tataatgtaa	aaaccgtagt	gaccgacagt	gtgtttctgc	agataattacc	ctatccgtcc	480
gtgtccggca	tttcatctct	gaagtctccg	aatgacgcca	tcataccccg	gcgattggct	540
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cttctattaa	agaaatactc	gattatcctg	ggaatggcat	tcatcatttc	ggcacctctg	2340
tcctgggtata	tcatttcgaa	atatctggaa	ggattcgcca	acaaagctcc	tatatcctgg	2400
tggtctgttg	caattgccgc	catagtgaact	gctttcatat	caactggccac	tctgatatgg	2460
caaatacgga	aagctgcca	tatcaatccg	gccaaagtat	tgaaaggaga	gtag	2514

<210> 2996

<211> 258

<212> DNA

<213> B.fragilis

<400> 2996

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gtaacgtcta	ccgtttgtcc	tgtccctaca	ttcacaagcg	atagcgagga	cttgttcacc	120
gaaagagcag	atgctcccgc	tgcccattta	aattggcacc	ttaccatttt	tcctgcacta	180
tcagtcacgt	caacattagg	agctaaccgt	gtgggcaacg	gattgcgggc	tatttccagt	240
ttgatggaaa	acgcataa					258

<210> 2997

<211> 447

<212> DNA

<213> B.fragilis

<400> 2997

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ccgggggtatt	cgacaatcat	gttatattggc	attatcctga	ctaaaagaag	gaaagaagaa	120
tgtccgcctg	cattgatccg	acatgagcaa	atacatcaaa	aacagtattt	tgagtgtttt	180
atactccctg	ttttaccggc	tatcctgttt	actccatgga	tgctgacctt	atgccctttg	240
agtttctata	tactttatct	ggcagagtgg	ttcataagtt	tcgtatggta	tttttggagt	300
caaggaatga	cagatccggg	cagagccggc	catagggcat	atatgtcgtc	ggccatggag	360
atggaggcta	aggtaaaaga	ggtagaagca	gggtatctcg	aaagaagaaa	acactttgca	420
tttatgaggt	attacgacaa	aatataa				447

<210> 2998

<211> 1371

<212> DNA

<213> B.fragilis

<400> 2998

tataacatgg	atcagcttgg	aaaaatatta	attgtaggcg	ataacgagga	tgtgttgttc	60
gccctcaatc	tattgctcga	accttatact	gaaaagatta	aggtggctac	tactcccgat	120
cgcacgaac	acttcatgac	tacgttcggg	cggacatca	ttttgctcga	tatgaacttc	180
agtcgtgatg	ccatcagtg	gcaggaagga	tttgagagtc	tggaaacagat	tctgaagatc	240
gatccgcagg	ccattgtgat	ttttatgacg	gcttatgccg	atacggacaa	ggctgtgcgt	300
gccatcaaag	caggtgcaac	ggactttatc	cccaaaccat	gggaaaaaga	gaaactgctg	360
gctacactct	cttcgggcat	gaaactccgg	cagtcacgtc	atgaagtga	tatgctgaag	420
gagcaggtag	aagtgtctgag	cggacagggt	ggaccgaaa	atgagattat	cgggtgaatcg	480
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tcgctcccta	tgcaatcgaa	actgctcact	gcgatagaga	aaaggcagat	cagccgggta	840
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agggcaatgg	tggatgaagg	taacttccgt	caggatctgc	tctatcgcat	caatacgata	960
gaaattcata	ttcctcctct	acggggagcgt	ggtaacgatg	tcattctgct	ggccgagttc	1020
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aagaataagt	tactgaagta	taattggccg	ggcaatgtac	gcgagttgca	acataccata	1140
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tcttctgtcc	ggcaaaagaa	agaggaagag	gtactcaatc	tggaaattgtt	ggaacggcaa	1260
gcgtagagaa	aagccatgcg	gctgagcgag	gggaacatca	cccgggcagc	cgagtatctt	1320
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<210> 2999

<211> 1488

<212> DNA

<213> B.fragilis

<400> 2999

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gccaaagctt	agtcacccga	cgcacaaaac	gcacgccaca	gtttccgctc	agcctactgg	180
aactataaat	attacagggc	gaactatctg	cctgccttga	gcctgacctc	ggacccgaac	240
ctgaaccggg	ctatcaataa	ggtaacactg	ggagacggaa	ccgtgaagtt	tgtagaacaa	300
aacatgtcta	gcaccgacct	tactctgaat	ttaacacaga	acattccatg	gaccggcggt	360
tcactgtttg	tggaaacggc	agcacaacga	atggatatct	tcagcgacca	cacgcagccc	420
tggcagactt	cacctattaa	tataggctat	cgtcagtcgc	tcttcggata	taacagcctg	480
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cacgtaccgg	acttcagtgt	agaactgcac	gaagccttat	tactggccaa	cgaaaacagt	900
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gacaagctgg	gaagcgccta	caagaggcca	ttggaccagc	agtacgtcag	cctgagtgtg	1080
gcactaccga	tctctgactg	gggacggggc	aagggcaaa	tgccgctggc	acgctccaac	1140
cgcgaccttg	tgtacacaca	ggtggaacaa	gacaagaccg	atttcgaact	aaacatacgc	1200
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gaaacagctc	aacgacgcag	cgactgggcc	cgcaaaactt	atctgctggg	caagtctacc	1320
attctcgatc	taaacgcttc	catcaccgag	aaggaccagg	cacgccgcaa	ctacataacg	1380
gctctttaca	actactggag	tctgtattac	acgttgcgca	gccttactct	tttcgacttt	1440
gaaggcaaaa	cgcgccttac	cgagaattat	gacctgctga	tagactga		1488

<210> 3000

<211> 462

<212> DNA

<213> B.fragilis

<400> 3000

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aagtttcatg	tcgatgtaat	tttaatgggt	gccgcaaagt	tcgcatactc	ttttcagggc	120
gtaaaggaca	tcctagttct	tatggaactt	ggaaaatacc	ccggacgggg	agtaaaagca	180
aagcgaatca	aaacagtaga	aataaatcat	ttaataaatt	acaagtatgg	caaaagcaag	240
ttggtgcaat	gtaagcccca	tgtcggggcaa	gagagatggc	gttttgacaa	tcagtgcggg	300
tgtcacaca	ggacgtgtag	cacgaaatac	agtagttacc	gtaacagcgg	caaacggaac	360
gagaccctca	gccagtatag	cggatatctca	ggcaggtgca	ggggtatcca	caaccatgga	420
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<210> 3001

<211> 225

<212> DNA

<213> B.fragilis

<400> 3001

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aagtttcatg	tcgatgtaat	tttaatgggt	gccgcaaagt	tcgcatactc	ttttcagggc	120
gtaaaggaca	tcctagttct	tatggaactt	ggaaaacacc	tcggacgggg	agtgaagca	180
aagcgaatta	aaaacagtag	aaatcattta	ataaattacg	attag		225

<210> 3002

<211> 639

<212> DNA

<213> B.fragilis

<400> 3002

attacgatta	gtatggcaaa	agcaagttgg	tgcaatgtaa	gccccatgtc	aggaagtggag	60
aacgggactt	taacaatcag	tgccggcagca	catgccggac	gggaggcccg	cagtagcaca	120
gtgaccgtca	cggtctaaaa	cggaacgaag	ccctcggcca	gtatagcggg	atcacaagcc	180
ggcgtaggag	tgcaattaac	gatggatacc	tctaaaccgg	atttaccggg	agaaggaggg	240
tctgtcacta	ttaacgggaa	ctctaacagc	ccgacattga	aaatatcggt	tcctctgatt	300
aactttccgg	gggttaccgc	ttccgcaaaa	ttcaatgctc	cggaattac	tgacaaagtg	360
cttgccgcct	cagagacggt	tactatccca	ggagaccccg	gagcgaacgg	ttcttatgcg	420
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tctgctcttt	cggtgaacaa	gtcctcgcta	tcgcttggtg	atgtagggac	aggacaaacg	600
gtagacgtta	cctccaatga	cgaatgggca	gtatcataa			639

<210> 3003

<211> 246

<212> DNA

<213> B.fragilis

<400> 3003

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gaaaaagtgc	ttaaagacaa	agttcccgtg	cagcaaaccg	gaacctacag	cgaagccacc	180
aagaaagaag	tgcgcgacgc	agtaaaaagag	ctcaatccgg	acatgagcgg	attggatagg	240
gggttaa						246

<210> 3004

<211> 1305

<212> DNA

<213> B.fragilis

<400> 3004

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gcatttgtcg	cttttccttgt	ttacgtcatc	attctgtcgg	ccgggccggc	caagctccgc	180
atcgagtcgg	aaaacataca	gatagccgaa	gtcaaagatg	acaagtttat	ggaatacgtc	240
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accctctcga	atccggactt	gctgcgtagc	atcgaagacc	agcgggacga	ctgggagaag	420
caacgcatac	cttatcagga	gaaagaaatc	gaaatggaac	agaaaagcct	gagcctgaaa	480
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gaacaagcca	tcgtcatccc	acgcggcaac	ttctatcagg	ccaccggcgg	acagtggatt	1140
tacaaagcca	atgcatctag	aaccaagcc	gtacgtacgc	ctatcaccat	cggacgccag	1200
aatccgcaac	aatatgaaat	taccggagga	ttagagcccg	gagattatgt	cgttacaaca	1260
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<210> 3005

<211> 1290

<212> DNA

<213> B.fragilis

<400> 3005

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gtgctctcca	tcggaggata	cttgctgttc	tgttacgaat	tatggttcag	cactctgatt	120
gtgggcatcc	tgtgatcgc	tacaggcggt	catctctatt	ccatccagat	gaaattggca	180
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cagatcatga	atctgcattg	cggcaccatt	acagtctcct	cagagatagg	gaaaggaagc	1260
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<210> 3006

<211> 1254

<212> DNA

<213> B.fragilis

<400> 3006

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 <213> B.fragilis

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 <211> 378
 <212> DNA
 <213> B.fragilis

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<400> 3009

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<211> 2949

<212> DNA

<213> B.fragilis

<400> 3010

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<211> 183

<212> DNA

<213> B.fragilis

<400> 3011

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<210> 3012

<211> 315

<212> DNA

<213> B.fragilis

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<211> 3165

<212> DNA

<213> B.fragilis

<400> 3013

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<211> 186

<212> DNA

<213> B.fragilis

<400> 3014

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<211> 237

<212> DNA

<213> B.fragilis

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ctgaaaatgt	ttctgagttt	ttttattttc	agaacacaa	aaaaagtgt	tgaatgtaat	180
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 <212> DNA
 <213> B.fragilis

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<210> 3017
 <211> 1176
 <212> DNA
 <213> B.fragilis

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 <211> 297
 <212> DNA
 <213> B.fragilis

<400> 3018
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<210> 3019
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 <213> B.fragilis

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 <213> B.fragilis

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<210> 3021
 <211> 876
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 3023
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 <212> DNA
 <213> B.fragilis

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gaaggaaaaa	acaatataaa	ggcctcagaa	tatttgatgc	ccaaacgaaa	gggagcagaa	180
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 <212> DNA
 <213> B.fragilis

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<210> 3025
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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

<400> 3026
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 <212> DNA
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<400> 3027

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
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<211> 582

<212> DNA

<213> B.fragilis

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<211> 1146

<212> DNA

<213> B.fragilis

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1146

<210> 3033

<211> 186

<212> DNA

<213> B.fragilis

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aaggaaaatg	tttttgagag	tctgaataat	atgttattca	cttttttgcc	cataggaagt	180
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<210> 3034

<211> 1446

<212> DNA

<213> B.fragilis

<400> 3034

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atgcaaacaa	aatgtataag	attattttaag	atagtgaat	tgggaagctg	ccaacatatt	180
gatagcaggt	gttgttttac	ttttgtaaac	cagttaaaag	taaagaagaa	gatgacatca	240
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caaattattc	gccatcgaaa	gaagagagag	atztatacgc	cttaccgttt	ctgggaggca	360
gagtttaaca	cccggttaga	aatggtggag	aacgtcggag	gcaatcgccg	tcgtctgctc	420
attgtccgcg	aagccaatga	ataccctata	tataaaaga	aggagttaga	ggctatttgc	480
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cggtaa						1446

<210> 3035

<211> 873

<212> DNA

<213> B.fragilis

<400> 3035

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tcaggatatt	tctggttgag	cgaacacccc	gaagtagccg	gttcaaaagg	ttgggacggt	420
gcttggtgagc	gtatcgcttc	atgggtcaaa	ctgcaagata	aggtttccga	taaagaatat	480

tttgccttga	ataccatct	ggatcatgtg	ggggggatgg	cacgtcgtga	aggtataagc	540
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ttcaattcag	aaccggaatc	agatgtgac	aaacacgtca	cagattctgc	caatccggaa	660
catctgacgg	atgctcgcca	ggcatcttcc	attgtttatg	ggccttctcg	gagctttcat	720
gatttcggaa	agattcccta	taacaaacgt	ccgttgattg	actatgtatt	cgtacgcaac	780
ggtcttaaag	tcttgagata	tggtattttg	gctgaaacgg	aaaacaacgg	ttttttgtca	840
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<210> 3036

<211> 1170

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1026)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3036

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gaaaccgttg	aaccgaagag	tttcgaagaa	gcccggcaga	ttcttcctaa	tcctatttgg	240
gccggacacg	aaaaggaaact	tgaaatgtat	tggagagcat	gggaaatagc	tgttggcaat	300
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ggtaatatct	ttatgtggga	ttcttctttc	atcctaattg	ttgcacgata	tggtacacgc	420
ttcttccctt	tccagcgtac	attggacaat	ttctatgcca	agcagcatcc	cgatggtttt	480
atctgccgtg	aaataaaggc	cgacggagcc	gattgcttcg	agcgttacga	tcgggtcagc	540
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gaacgcctgc	ataagatatt	cccggtaact	tgtgcgtatt	acaagtgggt	gaaactcaac	660
cgtacgtggc	gtaacggaac	ttattgggtca	agcggatggg	gaaccggtat	ggataatatg	720
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ttccctcttt	gtcggcagat	catcctaagt	ataaagagaa	cgggcgttat	tggaaggtg	1140
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<210> 3037

<211> 2148

<212> DNA

<213> B.fragilis

<400> 3037

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gatgacgagg	gagagcctgc	catctctatc	gtaatcagag	atcagaatga	aaagggagat	180
gtatacggca	tcacagacct	cgacggaaag	ttcaagatca	tggcagatcc	caatacgacc	240
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tacgtagact	ccctctatat	ggataacccg	gacgatgaat	gccgggtgtga	catctacatg	720
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aaagagattg	cgcagataga	cggagacgta	accgacctac	tgaacagtt	ggaagatgaa	2040
aagaaagaac	tgaaggaaaa	agcggagaaa	acaaaagaaa	aaaacgaaac	ggaagacacc	2100
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<210> 3038

<211> 1464

<212> DNA

<213> B.fragilis

<400> 3038

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tttacggatt	tgcattggac	accccgatct	ctggcgtgta	ctgaaacaga	agcgaccatc	180
tgcgccgtct	tgaagcggga	acatcctgat	attgccatat	tgagtggaga	tgtagtaact	240
gaagatcctg	ccattgatgg	ttggaagtct	gtgattcgtg	tcttcgatga	agctaagggt	300
ccttttctcg	ttactatggg	aaaccacgat	gcggaacaca	tggcaaagga	cgatatctat	360
gatcttcttc	tggagtctcc	ttattatgcy	ggagcaaaag	gaccggaagg	catcatggga	420
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gtaaagaatg	tatcttcacc	caaacaaggg	gtggcatata	cctattatga	aggaaagtgc	1080
aagcgggttg	ccggcatcgc	ttcttgtctt	aaagtaaaag	aagggttat	gaagaatatt	1140
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attcccgaaa	aaggaaatata	cgttttctat	acattctcgg	atgacggttc	aatgctttat	1260
attgacggta	aattgggtgt	tgataacgac	ggtggacata	gtgccgcgg	cgccgaagga	1320
aaaattgctc	ttgaaaaagg	ttttcatgag	ttgcatttat	tgtattttga	ggattacatg	1380
gggcaggaat	tggaaagtagg	attctccgga	ctggattttc	cggaaagttc	tctgcaggat	1440
gaaatgctgt	tcttaccgaa	ttaa				1464

<210> 3039

<211> 570

<212> DNA

<213> B.fragilis

<400> 3039

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aaagagaacg	ggcgttattg	gcaaggtggc	atatggccgg	gtaccaacta	tatgggtgatg	120
cagggaattg	taaagaaggg	atatcataaa	ttggcccggg	agattgcttt	gaatcattat	180
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attgccgaac	tgatagagtt	tattatcggc	attaggggag	attatgtcaa	tcaacagata	360
atctgggata	tgaatttgac	tgaactaat	ggaatagaac	gttatccttt	cggttcggaa	420
ggaatcataa	acctgaaagc	tgaggcacgt	cgttctgcaa	atgatgaacc	acgtatcgct	480
gttgatacga	atatcggttt	tgagttgctg	gtgctttatg	gtggttaagga	aaagaaggtg	540
aatgtaactc	cgggtaagca	tacctattaa				570

<210> 3040

<211> 543

<212> DNA

<213> B.fragilis

<400> 3040

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aatgttgtct	ttgtgtttatg	tgctttttgc	tgtctttatt	gtaatatgta	ctttgttttt	180
gtttctttct	gtattcttct	aatgctgatt	tacgggcttt	tttccagctt	cccagtcagt	240
cgggcaggaa	aaacaaattc	tatcgccagg	aagatataca	atttgacaat	tgtcagattc	300
ttgctccgac	cgtttatcga	aagtataagt	caatctcttt	tgattaaaga	tgcagcaggg	360
atgtattctt	atatttctaa	gcaagcacia	gtccgcattc	gtttcatgtc	tttctataat	420
gtatatactt	ttcttatctg	tcacatgggg	cgtgagatgt	cgttttcacc	ttgtccgggc	480
tggttcagaga	cccggttatg	cgatattacg	tggtttccat	gccctctagg	ggaagccgga	540
taa						543

<210> 3041

<211> 192

<212> DNA

<213> B.fragilis

<400> 3041

caggctccgg	tgcagatgcc	tggtgtttca	ctaggccgca	tgatgcagcg	aaaaatggca	60
aaactaataa	aattattttt	tccatggcat	tatgtcatta	attattttac	aaacaaggct	120
gaagtaggaa	tcggtgctaa	ttcctttgca	gaagggaagt	tccagaacca	gcttaaatgc	180
tccccttcat	aa					192

<210> 3042

<211> 1656

<212> DNA

<213> B.fragilis

<400> 3042

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acatcctatt	ttttgaatga	tgaacaagcg	attgatgcca	ttgacggact	ttatgctcct	180
attcatcagg	aaaaaggctt	tggacgtgag	ttgttttggg	aacaagggtgc	tgcttgtgat	240
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gaaagtccca	tcagtgggtg	atttgactta	ttctaccaaa	atatggctcg	ttccaactgg	360
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agtttggtg	aagcttttct	tatgcgtggc	atggcgcat	tttggtattgc	ttaccgttat	480
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cgtgctcaca	aagctgccgc	tgtagcctat	aaagctaagg	tatatgccta	ttgggctaca	720
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gcggaccgtt	ctaataccgga	gtcaactttt	acaatagagc	catatgccga	ctatctgaat	1560
aagactcctt	atcaagatta	tatgatggta	tttccttata	cggctgaaca	aattactaaa	1620
tcaaacggta	agttgatata	aatgacggt	tattag			1656

<210> 3043

<211> 786

<212> DNA

<213> B.fragilis

<400> 3043

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tggcgaggtt	tttcggtaaa	gaccggatc	gcttcgtcat	cggcctgttc	ttttactgag	180
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caataa						786

<210> 3044

<211> 1599

<212> DNA

<213> B.fragilis

<400> 3044

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atcgaggaga	aaataagtaa	tattattttt	gaccgttgct	atcctgcgat	attgccggaa	360
ataaaattta	taagcgaaga	aaacaaacac	ttgattcagg	tgactgtttt	cagaggtagc	420
acgccacctt	attatctcaa	agagaaaggt	aagttacaag	ggacatttat	tcgtgtaggc	480
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<210> 3045

<211> 225

<212> DNA

<213> B.fragilis

<400> 3045

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tgtgatgctg	attattttatt	cattcgcaat	acgggtgaag	gatacatatg	ggatgaaaca	180
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<210> 3046

<211> 207

<212> DNA

<213> B.fragilis

<400> 3046

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tattgcaata	aggcgattgt	tactttacaa	cagaaattgg	ataaagaaaa	agataatttt	180
aataaaagaa	tcaacagttt	gctatag				207

<210> 3047

<211> 234

<212> DNA

<213> B.fragilis

<400> 3047

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ggcaagcaag	aatatccgga	aggtaaagg	gacaatcaag	accaactacc	gcatactgct	120
cagacagtcg	aaagagttag	gaaggaaaga	gcctgtcggg	gctgtccgat	gacagcagat	180
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<210> 3048

<211> 1611

<212> DNA

<213> B.fragilis

<400> 3048

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tcatgcggcc	cggatgaact	gataccggaa	tccgtgccac	cgggtggtgaa	tcccggggat	180
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aataagggag	aaaaagccct	gagagggcga	ataaaagcgg	tctgggagag	ggaattcaag	1560
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<210> 3049

<211> 189

<212> DNA

<213> B.fragilis

<400> 3049

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aaacaatatt	cagaccgaga	acaaggcaca	ataataaccg	gatcaagtaa	tccgcttttt	180
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<210> 3050

<211> 201

<212> DNA

<213> B.fragilis

<400> 3050

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tatatcccg	tagctttcca	gtgtctccag	acgttcgcac	ctctccagtg	ccttgtcgag	180
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<210> 3051

<211> 324

<212> DNA

<213> B.fragilis

<400> 3051

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gtcattatac	gccattctta	tggctttgaa	acgctgtacg	ctcacttagc	cgcgtattac	180
accacagaag	gtcaaaaagt	cgacagaggg	gctgtaaatcg	cgtttgcggg	aagcacggga	240
aagagtacgg	gctaccacct	gcattatgaa	atcagaaaaa	acggtaaaacc	tataaaacca	300
tactgggtatg	gctatgacga	ttga				324

<210> 3052

<211> 417

<212> DNA

<213> B.fragilis

<400> 3052

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gctttttatc	tgtatatgaa	tgattggcct	tgcaaagata	aaaaaatatt	cgctatgaca	180
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aaaccggatg	actataagta	catcgacctg	tataaggagt	atgaaaggat	gcgctgccag	300
ggtgataaag	tgacgtattg	tgttgcggtt	ctttccaacc	ggcacggcgt	ttccgaacgc	360
aaaatctatg	agatcctggg	aagggttcaaa	aaagagtgtg	cgtttcatgc	agtataaa	417

<210> 3053

<211> 327

<212> DNA

<213> B.fragilis

<400> 3053

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atagagagga	tcaaccgggt	gtaccggctg	atccggatgg	aaaggaccgg	aagcctggac	180
gaactggcct	ccttgctgcg	ggtaagcagg	cggacaatca	acaattatct	ggaggagctc	240
cgctgatgg	gtgccgagat	caagtttagc	agaaggcaaa	accccatatt	atttcaagaa	300
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<210> 3054

<211> 1239

<212> DNA

<213> B.fragilis

<400> 3054

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tgggatactc	caccgagaaa	gaaacgaaat	aaagataaaa	tgacggatga	taagaataac	180
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gagaaacacc	ttgaaaaatg	aacatatgcc	tatggaaacc	ggctttccac	ggatgtatcc	360
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<210> 3055

<211> 189

<212> DNA

<213> B.fragilis

<400> 3055

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ggaagcgaca	tactctgtct	aagcttctat	tgtggattta	ttctaatact	gtcacacaga	120
agtaatgaaa	aggcatctgt	gtatggagaa	gaaaaagtcc	cggataatag	tccggaacct	180
gaaaagtaa						189

<210> 3056

<211> 408

<212> DNA

<213> B.fragilis

<400> 3056

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tgcgaacgtc	tggagacact	ggaaagctac	cgggatatac	tctcccgtta	cggagtatcc	180
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gagctggcag	cccccggttt	acgccaccgc	tcggggaacg	gtttctttcg	cgagaaggaa	360
aggggggtac	gaaagatgtg	tcattatac	ccattcttat	ggctttga		408

<210> 3057

<211> 210

<212> DNA

<213> B.fragilis

<400> 3057

aaacgatgtg	atatggaaac	tatttgggaa	aaagtggatt	acctgggccg	gatattatgc	60
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cacgaacagt	ctgggcaaag	aagtgatgaa	aaggcatttg	tgatgaaga	agagaaagtc	180
cgggataatg	gtccggaacc	tgaaaagtaa				210

<210> 3058

<211> 894

<212> DNA

<213> B.fragilis

<400> 3058

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<210> 3059

<211> 816

<212> DNA

<213> B.fragilis

<400> 3059

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gtcgcaaaaga	caacctcgct	gctgaacctg	gcagccggga	tcgcacggat	gcataagaaa	120
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<210> 3060

<211> 999

<212> DNA

<213> B.fragilis

<400> 3060

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<210> 3061

<211> 294

<212> DNA

<213> B.fragilis

<400> 3061

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accgttgcac	tgacggaaga	tctgaaatgg	gagttacgga	cgttcgcttc	ggaccatcgc	180
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<210> 3062

<211> 624

<212> DNA

<213> B.fragilis

<400> 3062

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<210> 3063

<211> 783

<212> DNA

<213> B.fragilis

<400> 3063

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atcagggagg	ctatcgcgaa	acgtaccccg	ctggatctgg	gactgaagga	caagaattcc	360
ggtgtggagt	tcgaggtcgg	aaatatcttc	atcgacgggg	atatcctgct	gttcgcgatg	420
acctgataaa	accgcacaca	gatcggttat	acgacggatt	tcatgcggtt	ctacatccag	480
gatgccaaga	tccgcaaaaa	gacggcggta	cagcagctcg	agcagaacat	cctgttcaact	540
ttcgattatc	cggaagaagt	accggcacat	gaaagccgga	cattcacctg	ggccatgaac	600
aagttcacca	tccccgataa	gaaacggctt	atcatcgaga	ttcaggagaa	gaacggcggc	660
cggcacttcc	tgtataagct	gaagaataag	tcgctcctga	cggcggagga	agtattcaga	720
agcagaaagc	aacaggaaac	ggaggatgaa	gccgacaaaa	tattaaggag	gatagcccca	780
tga						783

<210> 3064

<211> 405

<212> DNA

<213> B.fragilis

<400> 3064

gtagatatga	gactaaaacc	aatttacatc	accaccctgc	ttctcctgtt	tttcctttca	60
gggagagcgc	agaagatcga	ggaactcacc	gcagtccccc	tgcagatcgg	gtatgaaaag	120
accctgcacc	tgatcttccc	tactgaagtg	aagtattaca	gcacggagg	ggattacgtc	180
atcggtgaga	aagtgggtcaa	ttgcccgggg	atcatacgcc	tgaagcggc	ggaagagaa	240
ttcccggggg	aaacaaccct	gtcgggtggt	acggccgaca	caaagttcta	ttcgtactcc	300
atcagctaca	acgcacatcc	ggcccagagt	tatgtgcgta	taggcggaga	agctcccga	360
ccggaatacg	ctgccggtag	gaaaagaaaa	gcagctgttc	attga		405

<210> 3065

<211> 354

<212> DNA

<213> B.fragilis

<400> 3065

aaccatactg	gtatggctat	gacgattgaa	caggaaatag	aacagctggt	actgaagtgt	60
atcgcattgg	acgggctgaa	ggcctgccc	aaagaccttg	ccttccttga	gaaatacggg	120
ctgaagaacc	tgtatttctt	ttccctggaa	tacgcgatgg	aagggaacgg	tgacacgggt	180
ctcgacagta	aggcgaaagg	gttgatcaga	tggtaacctc	attcgacgga	ttttccctcg	240
ctgcggcaga	agtatgaaag	ggagggcaaa	gcggagctga	tgaatgcct	gtacctggag	300
gagagggtatt	ttaccgagtt	tctgaagctg	tcgggacagg	aggagggatt	atga	354

<210> 3066

<211> 195

<212> DNA
<213> B.fragilis

<220>

<221> unsure

<222> (42)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3066

tcatttttggg	gtaaaagagg	cattgaaaag	gaaagtgttc	cncgggtaca	ggtcggcggg	60
atagtttggg	tagaaagcca	tatagtgaac	ggtaagttta	tagccagtaa	acttgggggtt	120
aaacttacac	cgccaaataa	tcccgggaata	ccccataaac	gtcgggggttc	aatagcatgt	180
attcaaatgc	cataa					195

<210> 3067

<211> 198

<212> DNA

<213> B.fragilis

<400> 3067

caggccgggg	gcttttttct	cgaactgctc	ttcccgatta	aaatcccctg	gaaattcctg	60
ctttcatatg	gctctatatc	tttaaagacc	gcaagatata	acacatgggt	gcaattttat	120
tgcgctgtag	cttttcccat	gaaagaaata	cgttatttaa	ctaagtattc	tacttttaaag	180
agtatattac	taatatag					198

<210> 3068

<211> 1182

<212> DNA

<213> B.fragilis

<400> 3068

caaaagagta	tgatacatcc	attattaaca	accattaaaa	aacgattcat	tatgaagaaa	60
gtaagatttt	tactgttggc	cgcaatggtg	gccatgttta	caggatgcca	gaaagaagtg	120
gtggaacagg	agttggataa	caacaaaccg	acccctaccg	gtgatacgcg	catcatcatc	180
gagggagaag	ggatgatagg	tccggcaacc	agatcctcgg	acgggaaagt	ggagtttgaa	240
gggggctatg	caaccggagc	agggctatat	gatggtaaaa	aagccgttcc	agtgggaagcc	300
catcctgatg	cggatatga	agttaattat	ttctatggcg	gtccggaaaa	ccaacctaaa	360
aagttatgact	atgcacagtc	aggaacatcg	gcttttaatg	tttatttaga	agggcaggat	420
cacaccttcc	actgtggatt	caaagaaaag	aaacgtgatc	taacagtga	tgccggaacc	480
ggagggttcg	tgtccccatc	aggtacaaac	agctaccgcg	tggagaagcc	gatcagcatt	540
acggccaccc	cggacagcgg	atatgaattt	gccgggttga	cagttaccca	aggtgatgta	600
acgattgaga	atcctggcag	cccggctacc	accgcgaccc	tgcataatga	taacagtacg	660
attactgcaa	actttaaatc	cggcgctgag	ttgggtattt	ctgtacgtgc	cagcgcaaat	720
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ttttcattca	gaggtacacg	taacagtgac	cttcagtata	taaatccctg	tccggcaaaag	960
tctattttta	agaatacgat	tgatataagt	tgtgtaacgt	cactggagga	tgcttttagc	1020
ggaatgaaat	cattggaaaag	catagaatgt	gatttggttag	aaagttgtaa	aggaagagtg	1080
acaacttgcg	ctaatatatt	tgatcaatgt	acaaatttgc	ataccattta	taatggattg	1140
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<210> 3069

<211> 426

<212> DNA

<213> B.fragilis

<400> 3069

gagctcgtat	tgctgggtcat	aggtacggaa	gaagaaaccg	gacgtatttt	ccggaaagcg	60
------------	-------------	------------	------------	------------	------------	----

cggagtgcca	tggatggcgg	tacctcact	cagaatccgt	actttcctga	tgtcatcgcc	120
attgataatg	ctcaggatgg	aggagaacct	gacatggtac	tcctcaccgt	cggcgcgtat	180
gtcgatgata	ttttcaaact	ccgtcttgta	gacaacgccg	agttacagcg	catcgccata	240
ggcacgggtc	gcctgggtatt	tggcaaaaac	ggcatttgcg	tcgggcttgt	tgaccaggaa	300
cagggcacgg	gcacgggtttt	cctgaaggga	aaggcctgtc	tagcttggtc	acgaaatatg	360
cccttcctgc	tggagtgcga	ttttcaggag	gtttctgtac	aagaggccct	ggctgattgt	420
ccttga						426

<210> 3070

<211> 363

<212> DNA

<213> B.fragilis

<400> 3070

aggaggtat	tccacatttc	cggcaaagat	gttatccagg	aacagttctc	aaagcaagag	60
gatacatttt	caatcgccct	gcaattctca	aaaacattac	cgggtacagt	agtaacatgg	120
gactgccgga	aagttccccct	gaaaaaagtc	gcctttacgc	attttgcgaa	taaacgttcg	180
gggaccgtac	ttatgttcag	cagctcaaaa	gtggaagcaa	actcttgccg	atttacgcaa	240
tcatcaaaca	atcctgccgg	aattgataaa	atattaggtg	tagccgagaa	ggtagaatta	300
aactttacgg	ccgaggtaca	tcctctgaat	gtatttgctg	gaatagaatt	aagggctgca	360
taa						363

<210> 3071

<211> 693

<212> DNA

<213> B.fragilis

<400> 3071

caaaaaagat	cacattttca	tagtgttatt	ataaatattta	cgtatatattg	taatcaaaca	60
aaaatatcat	atacacaac	aagaatacca	aacttattaa	ttatgaaaaa	gctattatta	120
accactctgt	tgatcttcgg	aacagccatc	gttcacggac	aggacaaaat	gcaattttca	180
ataataggag	gatatgaaca	cttcaaaaaa	gaaaatccac	acaaccaaac	tgccggatat	240
ggtttaggtt	gcgagttcaa	gtattatttc	tataacagac	tctatgctct	ggccaacttt	300
catgcaggta	tttataatga	attcacacct	cgaacagcca	tggcggaaat	aggcgaagtg	360
gacttctcaa	tgcactggag	aactcgcgaa	tataaagggt	gagccggaat	gggaatcgat	420
ttactaaaga	cacagagaca	taatataatac	acgcaagcca	catttggtg	agccaaactc	480
aaacagtctg	ttccgggtat	ccacagttat	agaccaacag	tggaaatggg	aactaaaaat	540
acctaacttac	tccgatacgc	cacctccatc	tcaataggat	atgattatcg	ggttagtaaa	600
tctttcagta	taggcctcaa	ttatacaggc	tgggtgggtag	cagacgtcgc	atacaggaac	660
acgctaaatg	ccaaaattgg	ctataatttc	tag			693

<210> 3072

<211> 534

<212> DNA

<213> B.fragilis

<400> 3072

tttctatata	cggtaagtcc	ggatactcct	ttattcattt	ataaaataac	tcttatgaaa	60
ataaaagtag	gttttggttt	cgacgtccac	caattgggtc	aaggacgtga	actttgggtta	120
ggaggcattc	ttttggaaca	tgaaaaagga	ttgttggtg	attcggtatg	cgatgtattg	180
gtgcattgcta	tttgtgatgc	cttgctgggt	gctgccaaaca	tgcgtgatata	cggttatcac	240
ttccctgaca	atgccggtga	atataagaat	atagacagca	agattttatt	aaagaaaaca	300
gtggagctga	ttgctgccaa	aggctatcag	atcggttaata	tcgacgccac	tatctgtgca	360
gagcgcccta	aactgaaagc	ccatatccct	tcgatgcagc	aagtgccttg	cgaagtgatg	420
gggatcgatg	cagatgatata	ttccattaaa	gccactacca	ccgagaaact	tggtttttacc	480
gggcgggaag	aaggtatttc	cgcctatgca	accgtgctga	tcaatcgctg	gtga	534

<210> 3073

<211> 786

<212> DNA

<213> B.fragilis

<400> 3073

ggaaaaaatgc	ctatgctgat	acttttatct	tgtgccaaaa	ctatgagtga	cgtttcgaag	60
acaaaaacgc	ctctcactac	atttcccggc	ttccggaagg	aggcagcggg	ggttgctctg	120
cagatgtcac	aattttcagt	cgaggagtgt	gaacggctgt	taaaggtgaa	tcctaagatt	180
gctgttgaaa	attatagacg	ctatcaggct	tttctactcg	agggtacacg	ggaattgcct	240
gcattattgg	cttatacagg	gattgttttt	aaaagagttc	accccagga	cttttcagaa	300
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cgtcctctcg	atatgattag	gccttaccgg	cttgaggggg	atgtacgggt	gcctgaaccc	420
ggcaacagaa	cgatgtttga	ttattggaag	ccaatcctta	cagaccggtt	tattgcagat	480
atcaagaaa	ccggtggggg	gctttgtaat	ctggcaagtg	acgaaatgcg	gggacttttc	540
gattggaagc	gggttgagaa	ggaggttcgt	gtgataactc	ccgagtttca	cgtctggaaa	600
aacggaaaa	tggctacggg	agtggtttat	actaagatgt	cacggggcga	gttgactcgt	660
tatattctga	agaaccggat	agaatctggt	gaacaattga	agacattcgc	ctgggaaggg	720
tttgaattta	acgaacagct	ttcggacgag	acaaaatatg	tatttacaaa	cggaaaaaca	780
gaatga						786

<210> 3074

<211> 1434

<212> DNA

<213> B.fragilis

<400> 3074

ggccaaaagt	ttaattttta	ttcgaataag	aaaatgagca	cagaaaacga	agaatggcgc	60
gaagactcca	agagtgagaa	tacggacgcc	ggcgtgatg	gtaacagaag	ttttaacaga	120
gaaggcggat	acagtcgtcc	ttcatacaat	cgtgaagggtg	gcgaccgtcc	ttatcgtccg	180
agatttaata	gtaatagtga	agatcgctct	cagcgttctt	atgggtgatcg	tccgcaacgt	240
ccttcatata	atcgtgaagg	tggcgaccgt	ccctatcgtc	cgcgttttta	cagcgagggg	300
ggtgaccgtc	ctcagcgttc	ctatggcgac	cgtccgcaac	gtccttcata	taatcgtgaa	360
ggtgggtgacc	gtccctatcg	tccgcgtttt	aacagcgaag	gtgggtgaccg	tcctcagcgt	420
tcttatggcg	accgtccgca	acgtccctca	tataaccgtg	aagggtggcga	ccgtccctac	480
cgtccgcgct	ttaacagcga	aggtgggtgat	cgtccctcagc	gttcctatgg	cgaccgtccg	540
caacgtcctt	catacaatcg	tgaagggtgg	gaccgtccct	atcgtccgag	atacaataac	600
gataacagat	cgcagggatt	ctcacgtccg	atacgtcgta	cgggggatta	cgatccgaat	660
gctaataata	gtaagaaaaa	acagattgaa	tacaaagaac	aatttggtga	tccgaatgaa	720
ccgatccgtc	tgaataagtt	cctggctaatt	gcaggagtct	gctctcgctg	tgaagctgat	780
gaatttatca	cggcaggtgt	agtttctgtc	aatggagagg	ttgttacaga	gttgggtaca	840
aagatcaagc	gcgctgatgt	ggtgaagttt	cacgatgaaa	ccgttagtat	tgagcgtaag	900
gtgtatgtgt	tgtgaacaa	gccgaaagat	tgtgtaacta	cttcagatga	tcctcaggct	960
cgtctgactg	ttatggatct	ggtaaaaggg	gcctgcgctg	agcgtattta	tccggtagga	1020
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aaactgacac	atcogaaata	cctgaagaaa	aaaatctatc	atgtatattt	ggataagaac	1140
ctgactaagg	cagatatgga	ccagattgca	gccggtattc	agctggaaga	tggtgaaatc	1200
catgcggatg	ccatcagtta	ttctgacgag	gtgaagcgtg	atcaagtggg	catcgaaatc	1260
cactccggaa	agaatcgtat	cgtccgtcgt	atatttgaat	cgttggggtta	caagggtggg	1320
aaacttgacc	gtgtattctt	tgccggactg	actaaaaaag	gattgcgccg	tggtgagtgg	1380
cgttatctta	cagaacagga	agttaacttc	ctccgcatgg	gatcttttga	ataa	1434

<210> 3075

<211> 627

<212> DNA

<213> B.fragilis

<400> 3075

aagataaggt	tgggaaccac	ttattcactg	gatcatcccg	agaaattctt	gtcggaaaaa	60
gccatcgccc	gccgccagcg	tcagcagttg	cctgtcgact	ctaccgatct	gccggtctgc	120
cgtcggatat	tggatgccat	ccgcgacagg	ggagtgaaga	ttgtggctat	gggaaatgg	180

gataatttcg	tcaactgtgtc	atgtaacgac	agtgccgtga	taggcgaaat	tgccgcactg	240
cctttttgtgc	gtgctaccga	aaagatatgg	gttgccccgt	cgaaacctgc	agcgggaagat	300
aaacgggact	ccctggcgaa	cagtcogctc	aagagtgaag	actactacag	tcctgccttc	360
cggcagatag	aaatcagtta	cggcgaaaaa	ttgcatgaag	ccggatttaa	gggacaaggt	420
atgaccattg	ccgtgatcga	tgccggatat	cataacgtgg	acaagataga	ggctatgaaa	480
aacatccgca	tcctgagtac	gaaagatttc	gtgaaaccgg	gaagcgatat	ctacgccaaa	540
ggatcgcacg	gaatggcgt	tctctcctgc	atggcgatga	atgatcctta	tttaatgggtg	600
ggtacgggtc	ccgaagcctc	ttattga				627

<210> 3076

<211> 1014

<212> DNA

<213> B.fragilis

<400> 3076

atcgtaaaaa	ccgtaataaa	aatgacatca	caaaaatcac	agaacagcaa	tatgctgctt	60
gcattcctca	ccctgctggg	agttattgta	ctggttgag	ttgtcgggtt	cttcatgctc	120
cgcaaaggct	cggaaatcat	tcagggacaa	gctgaggtaa	ctgaataccg	cgtctcaagc	180
aaagtgcggg	gacgtatcct	ggagttccgt	gtaaaagagg	gacaaaaagt	ccaggcagga	240
gatacactcg	ccatcctgga	ggctcccgac	gtaatagcca	aaatggaaca	ggctcgcgcc	300
gccgaagcgg	ctgcacaggc	acagaacgaa	aaagccatca	aaggagcgcg	tcaggaacaa	360
attcaagcgg	cttatgaaat	gtggcagaaa	gcaatcgccg	gtgtcgatat	agctgaaaaa	420
tcataataaac	gtgtcaaaaa	tttattcgac	caaggagtta	tgccggcaca	gaaactggac	480
gaagtcaccg	cacaacgtaa	tgcagccatc	gcaaccgaaa	aagcggcaaa	ggcccaatac	540
acgatggcaa	agaacgggtg	cgaacgtgaa	gataaaatgg	ctgcagcagc	tttggtggac	600
cgtgccaagg	gagctgttgc	cgaagtggag	tcgtacctca	aagaaactta	tttgattggc	660
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aatcagacca	ttcgctgaa	agtgcattat	atgaaagatc	ttggtacata	cgctgcctgg	900
aaagcaacca	agaccaccgg	ccagttcgac	ttgaaaacat	tcgaagtaaa	agcgactccg	960
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<210> 3077

<211> 558

<212> DNA

<213> B.fragilis

<400> 3077

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gaattacagg	tgagatttga	acatgccaa	aagttattgg	cacgaatgcg	gtgcttgagt	120
acgtatgacg	aaacttatcg	gggactactt	gaagaattga	tacctgatct	tcgggctact	180
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cgccgtaacc	ccaaagagta	cgcttatccg	gtaactattg	gcgaagactg	ttggattgggt	420
ggcggggctg	tcgtttgtcc	cgccgtgacg	ataggtgacc	gttgtgtgat	cggagccggc	480
agtgtggtga	caaaggatat	accggacgat	tgtgtggcgg	taggtaatcc	tgcacgtgtt	540
attaggtgtc	ggatgtaa					558

<210> 3078

<211> 417

<212> DNA

<213> B.fragilis

<400> 3078

gatagtagtt	attcaataga	acgttgccgt	agtatgaccc	tggaagagat	attgcaaata	60
gaagcacaga	atgttgattg	tatttttctg	tatcaggaag	aaggagcatg	gtatgcttat	120
gaacattctg	cttttttattg	ttattctctt	ctgggcatac	ttgatatacga	ctggttgcc	180

tgccccgatg	gagtctcttc	cgggcagaaa	acaatcaggg	tacgtgtttc	cgaaccggat	240
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ttgtgtaaga	tttcgtgtgg	agggttttat	tattggcggg	aacagcaaca	aatgaaattt	360
cgtgtattac	aggaaagaga	aagctcttgt	acgaagataa	atgaacatgc	tgaatga	417

<210> 3079

<211> 1437

<212> DNA

<213> B.fragilis

<400> 3079

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ttgcagcctg	ataattatct	aaacgacaat	atgaaacttg	atttacttac	ggccatctct	120
ccgattgacg	gccgatatag	aggcaaggct	gaagcttttag	ctgcatatct	ttctgaatat	180
gcgttgatta	aataccgtgt	gcaggtagaa	gtagagtatt	ttattacttt	gtgcgaactg	240
ccgttgccgc	aactgaaggg	aattgataag	agtgtgttcg	agtcattgcg	caatatctac	300
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gagtacaaag	agtttattca	ttttggactg	acttcgcagg	atattaacaa	tacatcgatc	480
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ggtcagccgg	catctccaac	tcgcttgagg	aaggaaatta	tggtttttgt	ttatcgctcg	660
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ggaaattata	atgacaccca	tgtggcttat	cccgaatatg	attggaaagc	attcggaat	780
cagtttggtg	cagagaaact	gggattggaa	cgcgaggaat	atacaacgca	gatttcgaac	840
tacgacaatc	tgtcggctat	cttcgatgcc	atgaagcgta	tcaatacggg	gatgatcgat	900
atgaaccgtg	atctctggca	atacatctcg	atggaatatt	tcaagcagaa	gattaaagcc	960
ggagaggtgg	gatcgagtgc	gatgccgcac	aaagtaaata	cgattgattt	tgagaatgca	1020
gaaggtaatc	tcggaattgc	caatgccatt	ctggaacacc	tcgcagtga	acttcccgtg	1080
tcacgtttgc	aacgcgacct	gacagattct	actgtgctgc	gtaatgtagg	tactccgttc	1140
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actattcttc	gtcgtgaggg	ttacccgcac	ccgtacgaag	ccttgaaggc	tctgactcgt	1320
acgaatcagg	ctatcacaga	aacttctatc	aaggagttaa	ttgaaggatt	ggatgtgaac	1380
gaagaaatca	aaaaagaatt	aagagtaatt	actccccatt	cgtatacggg	aatttaa	1437

<210> 3080

<211> 1929

<212> DNA

<213> B.fragilis

<400> 3080

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<210> 3081

<211> 1035

<212> DNA

<213> B.fragilis

<400> 3081

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ccgaagtcta	cttccatcct	tccttccatc	accaataaga	gcttgatgca	gttggcggaa	780
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gagaatggca	agtcgtatgt	gatttcgaaa	gatggaaagc	cgggaccggt	ttgtgagaag	960
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<210> 3082

<211> 807

<212> DNA

<213> B.fragilis

<400> 3082

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gagcgtgaga	acggaatgct	tcaccccgaa	gcattggata	agtcgcgctt	ttggctggtt	360
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<210> 3083
 <211> 849
 <212> DNA
 <213> B.fragilis

<400> 3083						
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ggtattcata	tcattgacct	ccacaaaaa	gttgcaaaag	ttgatgaagc	cgcagaggct	180
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aaacaggtag	tggctgaaaa	agctgcatct	gtaaacatgc	cttatgttat	cgaacgttgg	300
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gaggcttaa						849

<210> 3084
 <211> 282
 <212> DNA
 <213> B.fragilis

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aaagggatag	agcagaaaag	agaaataaaa	aaaatagcta	aaagcatttg	ccttcttcaa	180
aaagaatcag	tatatattgaa	gtataagaag	actcagatat	ggcaaaccac	aaattaccgg	240
gaatacccca	agctgaacaa	gctctgttgt	atgccaaaact	ga		282

<210> 3085
 <211> 720
 <212> DNA
 <213> B.fragilis

<400> 3085						
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tatgcacaa	aaaacgccga	acttccgaaa	ccggacaaaa	acgaaaagag	agtggctctt	180
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ggttacatcg	gccggggcat	cggcggacag	acttcttacc	agttcctggg	acgtttcagg	300
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<210> 3086
 <211> 483

<212> DNA

<213> B.fragilis

<400> 3086

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gactgcggtg	ataacgttat	tatcatcaat	gcagacaaag	ttaaattaag	tggtaacaaa	240
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cctgctcggt	tgatcgccaa	acctaacggt	gaagacagat	tactgagaaa	agtagtgaag	360
ggcatgcttc	cgaagaacag	actgggagct	aagttgctga	gcaatatgta	tgtttacgca	420
ggtagcgaac	acaaacacga	tgctcagaac	ccgaaagcaa	ttgatataaa	ctcacttaaa	480
taa						483

<210> 3087

<211> 759

<212> DNA

<213> B.fragilis

<400> 3087

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caggaaggag	aactcagaga	accggatatt	gaaattgaac	tcgattcgta	ccggagctat	720
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<210> 3088

<211> 1461

<212> DNA

<213> B.fragilis

<400> 3088

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<210> 3089

<211> 1263

<212> DNA

<213> B.fragilis

<400> 3089

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<210> 3090

<211> 2046

<212> DNA

<213> B.fragilis

<400> 3090

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<210> 3091

<211> 1383

<212> DNA

<213> B.fragilis

<400> 3091

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<210> 3092

<211> 675

<212> DNA

<213> B.fragilis

<400> 3092

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ggtgaacggt	acgtctcttc	taccagatc	tccaaagaaa	taaacatcga	tgcttcgcag	180

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ggcttggaga	ttgtagctgc	ttttgatgta	aaccgcgc	tggtaggcac	tacgtcaat	420
gggattccca	ttttccactc	tgacgatatt	cagaagaaga	tcaggagta	cggtgtgcac	480
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<210> 3093

<211> 873

<212> DNA

<213> B.fragilis

<400> 3093

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tattttgtgg	ttctgccaa	accgggacat	cccacttact	cggtctggat	ctattcgcct	180
acactcgaga	agaacagact	tctgtttatt	cacgaactct	cagcagacat	caacgaatca	240
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<210> 3094

<211> 501

<212> DNA

<213> B.fragilis

<400> 3094

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caattgtgcc	actatgtttc	agaaaagtcg	gatgctccgg	gtgtacttaa	accgagtaat	180
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agcattgaaa	agaatattca	tttgccgatg	ctcgacaatc	aggataatgt	tcttactttc	360
gaactcgttg	atgataaagt	attgcatctt	aaatatttta	tagagaagga	tctgaatggc	420
aatgaactga	attgctggta	taaagagact	tggaaacgta	ttgagatgcc	ggacaaattc	480
ccggaagaca	ttgtaagata	a				501

<210> 3095

<211> 1236

<212> DNA

<213> B.fragilis

<400> 3095

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accgggcatt	gctatctgga	gtttgtccag	aaagatcccc	gcagcaataa	tctgatagcc	180
aaggcaagag	gaacgatctg	ggctaacatc	taccggctgc	tgaagcctta	ttttgaggag	240
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catgaattgt	atggttacag	cctgaccgtg	caggatatcg	atcctaccta	tacattgggc	360
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<210> 3096

<211> 1008

<212> DNA

<213> B.fragilis

<400> 3096

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<210> 3097

<211> 819

<212> DNA

<213> B.fragilis

<400> 3097

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<210> 3098
 <211> 393
 <212> DNA
 <213> B.fragilis

<400> 3098
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<210> 3099
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 <212> DNA
 <213> B.fragilis

<400> 3099
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 ccacaagcta tctgccgtaa acagcgccca acaagacaaa aaaagactgc aggcaacaag 240
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<210> 3100
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<210> 3101
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 <212> DNA
 <213> B.fragilis

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<210> 3102

<211> 207

<212> DNA

<213> B.fragilis

<400> 3102

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tgtttttgtc	tttctgtcaa	tttgatatca	gaacctccct	acatttcggg	ttttcggggc	120
gacggaaaag	ttcgttaagaa	aaaacgacct	acacgcaatc	agccgattat	ccttttagca	180
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<210> 3103

<211> 1014

<212> DNA

<213> B.fragilis

<400> 3103

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<210> 3104

<211> 2586

<212> DNA

<213> B.fragilis

<400> 3104

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<210> 3105

<211> 567

<212> DNA

<213> B.fragilis

<400> 3105

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<210> 3106

<211> 462

<212> DNA

<213> B.fragilis

<400> 3106

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gtgcgtcaat	ccggcgatcg	ggtcgatttc	cccgacaata	tctacggata	cggagtgtccc	420
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<210> 3107

<211> 243

<212> DNA

<213> B.fragilis

<400> 3107

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acctttgatg	attctaccaa	gaactataag	tatcgtgacc	tggacggaca	ccatgcactg	180
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<210> 3108

<211> 1773

<212> DNA

<213> B.fragilis

<400> 3108

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<210> 3109
 <211> 960
 <212> DNA
 <213> B.fragilis

<400> 3109

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acagaggata	aagggatcat	tgcagtcaga	acgccaccgc	ctaccactat	tactattcat	360
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<210> 3110
 <211> 1581
 <212> DNA
 <213> B.fragilis

<400> 3110

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<210> 3111
 <211> 1296

<212> DNA

<213> B.fragilis

<400> 3111

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<210> 3112

<211> 906

<212> DNA

<213> B.fragilis

<400> 3112

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<210> 3113

<211> 1044

<212> DNA

<213> B.fragilis

<400> 3113

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<210> 3114

<211> 222

<212> DNA

<213> B.fragilis

<400> 3114

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aaagaagcca	atgaaataat	agctttctgt	accggaagc	tgacaaaggc	agatcaggaa	180
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<210> 3115

<211> 1413

<212> DNA

<213> B.fragilis

<400> 3115

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<210> 3116

<211> 375
 <212> DNA
 <213> B.fragilis

<400> 3116

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atgagtggag	tcgtacggaa	ctactttgaa	aactcttaca	aagagatggg	ttctttcttc	300
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ggacaagaaa	aataa					375

<210> 3117
 <211> 2241
 <212> DNA
 <213> B.fragilis

<400> 3117

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ctttcacaag	cccgaaccc	gagcttaccg	gacacctatc	tgattgttgg	agatacagag	180
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gccggccagg	acgaaagggg	aactttctat	gccttacaga	cgtagcaca	gttactgaat	420
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<210> 3118

<211> 360
 <212> DNA
 <213> B.fragilis

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 cagaacttac ggggtgcaatt ggatcgga aaacggggcg gcaaagtcgt aaccctaatt 180
 accggctttg tcggcacoga gaacgacgtg aaagatttgg gaaaactcct caagacgaaa 240
 tgtggagtag gcggatcggc taaagacgga gagattatcg ttcagggaga cttcaaaca 300
 aaaatagtag aactgctgaa gaaagaagga tatacga aaaagcagt agggaggataa 360

<210> 3119
 <211> 618
 <212> DNA
 <213> B.fragilis

<400> 3119
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 ggcaaaccctt tctttattcc cgatttttcg aatgaagtgc attatgaaac agaactggta 180
 gtgcgcacat atcgcttggg aaagaatata gcttcacgct ttgctcatcg ttattatgat 240
 gcgggtgacag tcggcatcga cttcactgca cgtgatttac agcgcagggt tcgtgaggcc 300
 ggtaatcctt gggaattatg taaagggttc gatagtctcg ctgccattgg cacatttcta 360
 ccgggtggagc aactggccga tgtgcagaat cttcatttcc acctagatat agacgggaaa 420
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 gtcgggtccgg tcagtatcgg ccagcatttg gagggatacc ttgaaaccga gaagttgctt 600
 gatttctata tccggtaa 618

<210> 3120
 <211> 282
 <212> DNA
 <213> B.fragilis

<400> 3120
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 gcacaacagg atacgttaaa gtatcgcatc agcctgaaag ataagggttg gaaccactta 120
 ttcactggat catcccgaga aattcttgct ggaaaaagcc atcgcccgcc gccagcgtca 180
 gcagttgcct gtcgactcta ccgatctgcc ggtctgccgt cggatatgtg atgccatccg 240
 cgacagggga gtgaagattg tggctatggg aaaatgggat aa 282

<210> 3121
 <211> 1932
 <212> DNA
 <213> B.fragilis

<400> 3121
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 acggtttgaaa tcaagaatgg acatttttat cgtaacggaa agataacgcc tgttctttcc 180
 ggtgagatgc attatgccg tatccctcat caatatggc gtcacgggt gcagatgatg 240
 aaaggtatgg ggttaaatac ggtggctacc tatgtgttct ggaatcttca tgagccggag 300
 cccggaaaaat gggattttac aggtgacaag aatttggctg aatttataaa aaccgcagg 360
 gaagagggga tgatgggttat tttgcgtccc ggtccttatg tttgtgccga gtgggaattc 420
 ggtgggttat cttgggtggt gcaaaatgtg aaaggaatgg aaatcaggag agataatccg 480
 gagtttctga aatatacaaa agcgtatatc gatcgtcttt ataaagaggt cggtagtttg 540
 cagtgtacaa aggggtggtcc gattgtaatg gtgcagtgtg agaataaatt tgggttcatac 600
 gttgcccgag gtaaggatat acctttggaa gaacatcgag cttacaatgc taaaatcaag 660

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acactctatg	ttccgggtgt	atggctgaag	aagggtgaaa	ataagattgt	tatctttgaa	1860
caattgaatg	aaaccctca	aacagaagtg	aaaacagtga	aaacaccggg	gttgatgaag	1920
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<210> 3122

<211> 195

<212> DNA

<213> B.fragilis

<400> 3122

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ttgatgaagc	aaagtaaaga	aataaatcac	tttcccgcca	aatttccctt	tgttttcttt	180
aaaaaaaataa	cttga					195

<210> 3123

<211> 318

<212> DNA

<213> B.fragilis

<400> 3123

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gattttaccg	gagttttatc	gttagagcat	ctggatgtta	atacaatggg	atatctgtat	180
agtgagcagg	gtgagttaat	agggaaaatt	cactcaacaa	aatcttctgc	tacttttaca	240
ttacctcaaa	aaggatatga	tgtgcttgta	attcactggt	tatcctatcc	ggtggaagtt	300
aggagagtca	tttattga					318

<210> 3124

<211> 996

<212> DNA

<213> B.fragilis

<400> 3124

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ttggctcgca	aaacattgac	tatcactatg	ttctttattg	gagcttctct	ctcattggat	900
gttgtgaagt	ccgtaggcat	caaacctttg	atacaaggag	tgcttctgtg	ggtagtgatc	960
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<210> 3125

<211> 432

<212> DNA

<213> B.fragilis

<400> 3125

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ggtaaacgta	tatattacct	ggacgttaaa	aagaaccgca	aagatgaaat	gtttcttgcc	180
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aagcacaaaa	ttttcttgta	taaagaggat	tttggtaaat	tcatggccgg	actcgaacaa	300
gctatcaact	tcatcaatca	gaatcaagaa	tatacagaag	attccgaatc	ggaggaaaaa	360
gtcgaacctg	aaagtgaacc	ggagactaca	gttttgata	gcgaaatcaa	gattgacatt	420
gattttgaat	aa					432

<210> 3126

<211> 423

<212> DNA

<213> B.fragilis

<400> 3126

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gcttatggta	acgaaaaaat	tatctctctg	gcagatatag	caatgtacac	aaacgattca	180
gaagtgcctt	tacgtgacgt	gttgcgttca	ataaaagaaa	aagaaaatgc	agctatcgct	240
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cctgactttg	atcgtgacag	agtatatacc	aatgatatca	agaaattgat	tttgtggtat	360
aatatcttag	tctctaaccg	aattacagac	tttgggtgaag	agactgccgt	tgaagcagaa	420
ttaa						423

<210> 3127

<211> 825

<212> DNA

<213> B.fragilis

<400> 3127

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gacaccata	agagattctt	cgctcttctg	gaatcccaga	acatccgtgt	aaatcgcttc	180
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gtctttcttc	tgcttactgc	attgatacac	aattttctaca	agaccatcat	gagcaggctt	660

gacaccaagg	cttttgggct	caagaaaacg	agtcgcataa	aggcttttgt	cttcagattc	720
atctccgtac	ctgccaaagt	gatcatgact	gcaaggcaat	acgtgctgaa	tatctacaca	780
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<210> 3128

<211> 2607

<212> DNA

<213> B.fragilis

<400> 3128

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<210> 3129

<211> 279

<212> DNA

<213> B.fragilis

<400> 3129

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gaggaatatt	acacaaaaag	aacaaaaagc	tttttaagat	attattctgt	acttgaaatc	180
tggacaattt	cactattcag	gaataatgta	acgaacgctc	atgctctgct	gtatatgcaa	240
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<210> 3130

<211> 1296

<212> DNA

<213> B.fragilis

<400> 3130

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agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcgtt	180
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cctgccaaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
gcttatgcaa	aacccttcaa	aacagaattc	ggataa			1296

<210> 3131

<211> 570

<212> DNA

<213> B.fragilis

<400> 3131

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aaaatgaacg	taggagataa	agccccagaa	ttgctgggta	tcaatgaaaa	gggtgaagag	180
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gccggatatg	aagtgatcgg	tgtaagtgtg	gacaatgaaa	agtcacacca	gaaattttatt	360
gagaaaaaca	atctgccatt	cacctgatt	gccgataccg	ataaaaaatt	ggtagaacia	420
tttggagtat	ggggagaaaa	aaagctatat	ggcgtgctt	atatgggtac	tttacgcaca	480
actttcctta	tcaatgaaga	gggagttatc	gaacggatca	tcggacccaa	agaggtaaag	540
accaaagaac	acgcttcaca	aattttataa				570

<210> 3132

<211> 1224

<212> DNA

<213> B.fragilis

<400> 3132

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ggtgtaggta	ccgttgtagc	acacaaagt	gcacaaaatg	ccgatgtatt	tactgatatc	120
atgatcgcca	gccgcacgaa	gtcaaaatgt	gacgacatcg	tgaaagccat	cggcaatccc	180
aacataaaaa	cagcccaagt	ggatgctgat	aatgtggacg	aactggtagc	actcttcaac	240
gatttttaaac	cggaaatggt	cattaacgtt	gcattgcctt	atcaggacct	gaccatcatg	300
gaagcctgcc	taaaagcagg	agtcaactac	ctggataccg	ctaattatga	gcctaaagat	360
gaagctcact	ttgagtacag	ttggcaatgg	gcctatcatg	aacgtttcaa	agaagccggc	420
ctcaccgcca	ttttagggtg	tggattcgat	ccgggagtaa	gtggtattta	tacggcatat	480
gccgccaaac	attattttga	tgagattcaa	tatctggata	tagtagactg	caatgccgga	540
aatcatcata	aagcttttgc	aacaaacttc	aatccggaaa	tcaatatccg	cgagatcacc	600
cagaacggac	gttattatga	aaatggccaa	tgggtgacca	cagggtccact	ggaaattcat	660
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gttgccatga	tgttctttta	aggcgaatgg	aaacgtccgg	gtgtaaacaa	cgtggaagag	1140
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<210> 3133

<211> 318

<212> DNA

<213> B.fragilis

<400> 3133

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attttttaaag	tttaccacac	ggcctttgtt	atctgtcaac	cgtccgtcat	cgagtacctg	180
caacaagata	ttaaatacat	ccggatgtgc	tttctcgatt	tcatcaaaca	atactacaga	240
atagggtttg	cgacggatcg	cctctgtcaa	ttgtccgcct	tcgtcatatc	ctacatatcc	300
cggaggcgct	ccaactaa					318

<210> 3134

<211> 732

<212> DNA

<213> B.fragilis

<400> 3134

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agttcaaata	tgcaattgtg	ggagttttat	caagtcatac	agccggaatt	gctggcaaaa	180
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gttacgcgtc	aggatttata	ccggagccgg	gcaaagtctg	tgcttgattt	tgaaagagga	300
aacgtgagac	gaaacagtcc	caaagaacgt	caggaaaaac	gtattaaaga	cagagagctc	360
tattatggaa	agctaatgcc	gtttctgtat	gcccgccttt	ttaggatact	gggactcctg	420
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agtgatatgc	gtgttgtcgt	ccacaaatct	tgtgcactgg	ctgccagac	atttatgatt	540
gccatggcaa	acgaaggata	tgatacctgc	cctttggagg	gctttgacag	caaacaaatg	600
aagaaactat	tgaagttgcc	tcatggggcc	gaagtgaaca	tggatgatcg	ctgtggaata	660
cgggatggaa	acaaaggaat	ctgggggtgaa	cggggcagag	taccgtttga	tgaagtttat	720
catagagttt	aa					732

<210> 3135

<211> 633

<212> DNA

<213> B.fragilis

<400> 3135

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agtgtcgttt	cacatttact	tgaagtgatg	ggagttcctg	tctatatctc	ggatgaagag	120
tcaaagaaag	tagtggccac	tgatcctgtt	attcgtaaag	agttgtgtga	tttagtagga	180
gaggaggttt	tttctggcgg	caaattaaat	aagactttac	tggccacata	tcttttcgct	240
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aggcaatgga	gttcacacaa	agagtgtctg	gatataatag	gtatggaatc	ggcaattctg	360
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gatggtgaaa	agccgttgat	accacagatt	ttagagctaa	ttgcttttct	atatcaaaag	600
attcattacc	tttgctccgc	aaaaaataac	taa			633

<210> 3136

<211> 252

<212> DNA

<213> B.fragilis

<400> 3136

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gtgttgcaaa	aagaaaaaca	gcaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 3137

<211> 351

<212> DNA

<213> B.fragilis

<400> 3137

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ttcttcatga	ttcgtccgca	gaacaagaag	cagaaagaga	tcgctaattt	ccgcaaactc	180
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aatgatgatt	acattgtttc	tgaaatcgct	tctaattgt	aaattaagat	agataagaac	300
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<210> 3138

<211> 537

<212> DNA

<213> B.fragilis

<400> 3138

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gcaagaatag	ataaatggat	gtgggcagtc	cgcactctca	aaactcgcac	aatcgctgca	180
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gcacgaggtg	cgggacgtcc	aactaaaaaa	gatcgccgga	gcattgagga	atthaccact	480
cccgaattta	tggatgactt	cgattttgat	ttcgacttcg	aagaagataa	tgaataaa	537

<210> 3139

<211> 1272

<212> DNA

<213> B.fragilis

<400> 3139

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ataccgttac	aaacagctat	gctgccccac	gatggtaata	tcaccaatgc	attggtgaca	180
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gtagccgcaa	cgatcctgca	agtagtgctc	aatctatata	tcacagtttg	cgggattggg	480
aaaacaacag	ccttgccagc	acagatgata	ggcggaaaca	gcaactcgat	aggtatggct	540
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<210> 3140

<211> 690

<212> DNA

<213> B.fragilis

<400> 3140

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<210> 3141

<211> 570

<212> DNA

<213> B.fragilis

<400> 3141

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gatgaacggtt tggaaacagc cggagaaatc gccaaaagct tctgtttggc aggtatcgac 540
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<210> 3142
<211> 1086
<212> DNA
<213> B.fragilis

<400> 3142
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aagtaa 1086

<210> 3143
<211> 600
<212> DNA
<213> B.fragilis

<400> 3143
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aataaggaaa ccattcagtt ccgtatgaat gaaccggagg agagtattga aggatatcaa 540
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<210> 3144
<211> 705
<212> DNA
<213> B.fragilis

<400> 3144
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atcacaggct	tttcttggtt	tgaagaaagt	ttggccggga	gaaaaaagga	agtacctttc	540
gaccttgagg	ctgcactcga	aaagagagga	gccgactacg	agaaggcatt	gattccgatg	600
acctcgaaaag	tagtggtgga	ctgtaacctg	ataacgggac	aaaaccggtt	cagttcaaaa	660
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<210> 3145

<211> 864

<212> DNA

<213> B.fragilis

<400> 3145

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atgtcatctt	gcggttcgac	aaaagaagcc	gcttctttat	catctttaaa	tggtgaatgg	180
aatattattg	aagtgaatgg	ctcggccatt	gtgccggcag	aaaatcagga	attgccgttt	240
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cgtatggctt	gtccggatat	gacaacagaa	caaaatgtgc	tgaatgcatt	gggacaggtg	420
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gtagtcgttc	ttcagaagaa	agcttcggat	gtaaagttgt	ctgctttgaa	tggtgaatgg	540
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atgatggctt	gtcctgatat	ggaagtggaa	ggcaaagtga	tgaagctat	caacgaggtg	780
aagtcattcg	atgtgttatc	cggaggaggt	atcggttttt	atagtgcaga	cggaacactg	840
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<210> 3146

<211> 591

<212> DNA

<213> B.fragilis

<400> 3146

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accgagagcc	aagaagaggt	gctgagaaat	tatttcagaa	caacggaagt	gcccggacat	180
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caacactttt	tccgccccaa	taactccaaa	aacagctggc	gctggattgg	aggggttgca	360
gttaccatat	tattgcttat	aggcattgga	tacgggattg	acaatttaag	caaaaatgtg	420
tgcccaccca	ccccacaaga	tacattctcc	gatccggaag	aagcctaccg	gatgttacag	480
gcaactttac	tggagatttc	tgccaacctc	aactatggac	tcaatgaggt	gaaagaaagc	540
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<210> 3147

<211> 786

<212> DNA

<213> B.fragilis

<400> 3147

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cttgacagtga	atgcacagaa	ctccagtaaa	gacaatactc	ctaaaaaagg	agactttact	120
gtagcagcta	ctgttgata	caatagttac	acaagtgtca	cagcccttc	ggggctgctg	180
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aactcggctg	acgagaatat	gggagagatt	cctaactatc	gtgccgtagc	cgatgctcag	420
tcgttcgcct	ataatgtgtc	agcaggtgtt	gatcgttatt	tcaacatcaa	gcgtgttcct	480

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ttgactatcg	gtgtcgacta	ctttgtttctt	cctgcactct	atatcgggtgc	gcagattgat	660
ccgttttgcat	atacgtataa	taagactacg	tataacccac	aagcagggtct	tggcgatctg	720
tcggcgagaca	gccacaacta	cagtgtgctg	gccgctccga	catttaagat	cggatttaag	780
ttttga						786

<210> 3148

<211> 216

<212> DNA

<213> B.fragilis

<400> 3148

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cgtcaacaat	cctttattgt	gatcaaaaata	tcctctaaat	acaaaatgcg	tgaattgtac	120
tatcgcaaaa	tctacacgtt	tttatcctat	ctgttccctt	tggactataa	aaaagcgctt	180
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<210> 3149

<211> 1023

<212> DNA

<213> B.fragilis

<400> 3149

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tttattgcag	gcggattttg	gttgcttcaa	acgttaaaca	atgattatga	agcagaattt	180
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aaaatttata	cgtcggaact	tgagaaaaaa	atagcaggac	aacttaattg	atcgacctgt	420
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gtgcgaatcc	atccggaaca	ggttgatttt	ttgatagaac	aactctcttc	tgatggcaat	1020
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<210> 3150

<211> 342

<212> DNA

<213> B.fragilis

<400> 3150

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accgaaaagt	ttaaaagaga	gtttctaccc	tatcatcgca	agctgtactg	cgtggcctat	180
cggctatttg	agaatgctgc	tgatgcggaa	gacttagtgc	aagaagccta	tctgaagctg	240
tgggataaac	gggaaggact	gtcggttatc	agcaatcctg	aagcattcag	tgtcacttta	300
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<210> 3151

<211> 597

<212> DNA

<213> B.fragilis

<400> 3151

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cccgatgaag	aaacggattt	cataacaaca	catttcccct	taaagcagtt	atgtaaatgg	180
acaccgggaa	tgaagtttat	gttcatcccc	gatagtagtg	atgaattcgt	ccccatatta	240
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gatttgtgtg	atcaaaatcc	gtatgccagc	atccctgccc	tcgtctatct	gcaagatgta	480
aacaaggcca	aggaattatt	aattgggaaa	acgctctata	cgcgctactac	catagcaaaa	540
acagacgatg	ccaacagcta	ttcaggatat	agagaagtca	atatcgcgaa	aggttaa	597

<210> 3152

<211> 843

<212> DNA

<213> B.fragilis

<400> 3152

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ggggtctctg	cgggagcttg	caacgggcctt	tcgtatatgt	ctcgccagcg	tggaacggcc	180
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aaactgaccg	atctctatga	ggaaggatac	gaatgtgcga	agcggcagct	tgaaaccctc	840
tga						843

<210> 3153

<211> 666

<212> DNA

<213> B.fragilis

<400> 3153

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atggaacctg	cagattttca	agcggaaaaa	agaataaact	attttccaaa	tgcatthttt	180
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gtttatcctc	aaaagacaat	tcgagtcaag	caaacagagt	tattacgtta	taccccat	300
catatcaaa	atgtacaacc	tgaaaaggca	ggaacatcag	ctacactcct	tctgacagat	360
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agtgaatcca	actggcttat	gcttgccaaa	ggagaagtaa	aaccaggcat	gacaaccgaa	540
gaatgcaaat	tagcaatagg	agaaccgata	gaaatcagag	ttcggacaga	ctcccgcttt	600
gaaacctggg	tatatagagg	aaagatatgt	gaatttgaaa	atggcatctt	gctccgggct	660
aaataa						666

<210> 3154

<211> 345

<212> DNA

<213> B.fragilis

<400> 3154

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gaagcacgtg	aaggggtacg	acaaataaaa	gatattattg	cccacttacc	cgaacaacag	180
caacgaatca	taaatatgcg	cgatattaaa	ggttgttcat	acgaagagat	agaacaagtc	240
actggattaa	actctataaa	cgtccgtgtg	ctactgtcac	gggcaagaaa	aaagatacgt	300
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<210> 3155

<211> 1629

<212> DNA

<213> B.fragilis

<400> 3155

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gcaaagcaat	tagagtctgt	tgcgaacatg	aataatgcga	atgcggatgc	taagaaagcc	180
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gaattggcgc	aggcacatgc	agatcaacaa	aaaatcctat	tggagaaagc	tcaggctgct	300
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aataagacaa	gaattacaac	tttgtttagt	aaagctaattg	ggttgctggc	aacgatcaat	480
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aaggaacagg	ctattgctaa	tcaggagaaa	accattgctg	accttgaaaa	tagtttggct	1560
gtaaatgaac	ctattttacaa	tgattattta	gctcagatca	aagctttagt	aggtgactct	1620
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<210> 3156

<211> 909

<212> DNA

<213> B.fragilis

<400> 3156

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caggaatttag	agacttggtta	tcagggttcgg	ttatttcgatc	ggcagggaaa	taagatttct	180
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cgggttggaa	acgaaatgca	tttgctgcat	aacgaatata	taggcgattt	gaaattgggt	300
gccagtacta	ccattttctca	atatgtgctt	cctcctttgc	ttgctaattt	tatagccaag	360
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tttcgtgtta	ttgagattaa	aggtatgcca	atgctacgtg	agttctgttt	tgcacaaccg	840
caaggacagg	agagtgggtt	atcacaaagt	ttgatgcagt	ttgctatgca	tcataacaaa	900
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<210> 3157

<211> 1017

<212> DNA

<213> B.fragilis

<400> 3157

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aattcgttaa	taacagtatt	aattaagatt	atgattaaca	gagttcttat	tcgtctaaag	120
atcatacaga	tagtgtatgc	ttactatcaa	aacggcagca	aaaattttaga	ctcagcggag	180
aaagagttgt	tctttagcct	ctcaaaggct	tatgatctgt	ataactatct	gctgatgctt	240
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gatcaggact	tcattaaaga	attatacgaa	aagattattg	catccgatat	atacaaggag	480
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<210> 3158

<211> 609

<212> DNA

<213> B.fragilis

<400> 3158

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tgcgtacttt	acggtgggtg	agaagtagtt	cacttcacag	tgaccaacga	aggacttcgt	180
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ggtaagacag	taaaagttgg	cgaactaagc	tatgaagggt	tagaattgct	gaatgcaaaa	540
gaagctgttg	tatgtgctgt	taagttgact	cgtgcagcaa	gaggtgcagc	tgctgcagcc	600
ggaaaataa						609

<210> 3159

<211> 327

<212> DNA

<213> B.fragilis

<400> 3159

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acaaaattgg	acattattgt	agaagtatta	ggtgagagag	agccggagat	acgacgtttg	180

gttatcttgg	acgaccggtt	aaggatgttt	gccgaatcta	acgatgaaaa	tggtcggggc	240
atacctatcg	agttggtagc	ggagtgggct	acgctgctga	ataaatatta	tccgttggca	300
ttggaaaaac	ggaatatgat	gaattaa				327

<210> 3160

<211> 588

<212> DNA

<213> B.fragilis

<400> 3160

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gcttatgccc	accgttttgt	agacttggaa	gatgcggaag	aaatagttca	ggatgtaatg	180
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gccgatacat	tattttatga	gaaaagccag	gcaatgattt	atgacgtgga	tttctatcag	360
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gaagcgttta	tcatgcaccg	gttcagagat	atgagctaca	aagaaatcgc	acaaactctt	480
aacacctcta	ccaaaacagt	agattaccgc	atacaacagg	cactaaaatt	attacgtaaa	540
gaactcaaa	agttcctgtc	gttcgccttg	atatttctgg	cagcgtaa		588

<210> 3161

<211> 399

<212> DNA

<213> B.fragilis

<400> 3161

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gttacacatc	cgggctttac	attcccgtct	gataatgaag	gagtgcgggt	gcagaaactg	180
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aggaaattga	aattaaaaga	tgtatcgggtg	gtaggtcctt	caaaatcgat	cgtccgtagt	300
gaacgtgtgg	aggagagtgg	taaagattcg	tttataactc	cgctaggcgt	atggccgaca	360
gaccataaag	ccgtaatggc	tactttttcc	ctgagataa			399

<210> 3162

<211> 1836

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1787), (1788), (1807), (1809), (1811), (1812), (1815), (1823), (1824), (1829)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3162

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agtcaataca	aaattatgca	aaattatctt	agcatccaat	tgttacgggt	ggtaaagtct	120
tcgctttggc	tgacctcgaa	aaaaattcca	aaaactatgc	gactattcat	cctattccta	180
atttgctcta	tgagttttgt	gcatgcgaca	gacagcttcg	cacaaaaggt	ggaaatcagt	240
attgatgcac	agaatcaaac	tgtagagaaa	gttctgaaa	aaatagaaaa	gcaatcgggc	300
tttggctttt	tctttaataa	caaacatgtc	aatctgaaaa	gagttgtttc	tgtttcgggt	360
gataaaagta	atatatttaa	agtactggat	aaaatccttg	aagggaactga	cgtgaaatac	420
tccgttttgg	acaaaaagat	tattttgtct	actgaaatga	catcgaagca	acaacaagcg	480
gtgaaaatct	cgggaaaagt	agtcgatgtc	aacggagaac	cggtgattgg	tgccagtatc	540
gttgagaaag	ggaccaccaa	tggtacgggt	accaatttgc	aggggtgattt	ctctctatcg	600
gtcagttcag	ataaggcagt	gatcgagatt	tcctacatcg	gataccagcc	tcaggaactg	660
aaggctcattg	caggaaaacc	attgaatgtg	acaatgaaag	aagatgccca	ggctttggaa	720
gaagttgttg	tggtaggtta	cggttcacag	aagaagggtga	atgtgattgg	ttcaattgct	780

gctgtggata	gcaaaaaact	tgaatccaga	actgcacca	gtgtttcgaa	tatgetgacc	840
ggacaactct	ccggagtgc	gacacacag	tcgagcggt	atccgggaca	agaccagggt	900
acgattcggg	tacgtggtgt	aggctctttc	ggagcgactc	ccgatccctt	ggtactggtc	960
gatggacttc	ccggcagtc	gaatgatttg	aaccgcgcag	atattgaaag	tatctctata	1020
ttgaaagatg	cctcgtcggc	cgccatttat	ggttcgcgtg	ctgcgaatgg	ggttgtagctg	1080
gtaaaaacaa	aagggtggcca	gaaaggtaaa	gttaccgtaa	gttataacgg	atatgtaggc	1140
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aataaggcta	tgggtaaggga	agtttattcg	gcggaggaga	ttcagaagta	taaggatgga	1260
tcagatccgt	ataattatcc	taatgaacat	tatctggata	aacttctggg	caacaaagga	1320
ctgcaaaccg	gtcatgaact	gaccgtgaac	ggaggaaatg	ataagacaca	gtatatgggt	1380
tctttcggct	atgtaaaaca	gaatggctctg	atggaacaca	atcactacga	ccgtttacaac	1440
ggcagagtga	atctgactac	agagttggct	aaaaaactga	cactgactac	ccgtttgggt	1500
ggagtcgttt	ctaaacggag	cgaaccttct	actccgggtg	gaatggactc	tgcgggattt	1560
aaagctttct	caagtaatgc	acttcgtttt	ccgggattat	gggcaactaa	attggaagac	1620
ggatcttacg	gcttaggacc	gaaggtagctc	ggaacacccat	tggcatggct	ggacagcggc	1680
tctttttatc	atgaaaactt	ccataagttc	cgttctaata	tcgagttggc	attcacacct	1740
gtgaaaggct	taacgctgaa	agcgtcttca	ccacggggct	ggagttnncc	atcggcactc	1800
agtttcngng	nttctntatcc	atnnggggnc	tctatc			1836

<210> 3163

<211> 1158

<212> DNA

<213> B.fragilis

<400> 3163

ttcggagaat	acaggggcta	ttgccggcaa	gtattttatat	ctttgctact	taattttttat	60
ttgagatatt	taaattgta	acttatgaac	aggaaaaact	acttattagc	tttcattctt	120
tgtgtgcaga	cgctgtttgt	ttctgcgcaa	gtctatccgg	tccgcgcaaa	gttgaccgat	180
gaaaagtctt	tttcaatgat	tcttttacc	gatccgtata	gttatacaat	ggtcgatgcc	240
cattacgcac	tttttgagtt	acagacagca	tgggtagcca	atagcattga	atctctgaat	300
ataaaagggtg	tgctttgtac	cggtgatttg	gtggagcaaa	atgaaattcg	cattccggat	360
ggggtgaacg	gcaaccagac	aagtggagg	caatggcggtg	ctgcttcgcg	tgcgtttgag	420
cgactggatg	gaaaattgcc	ttatgtgatt	tgtaccggta	atcatgatta	tggatatcag	480
aaagcggaaa	atcgtttgtg	tcatttccct	gattactttc	ctgcggagag	aaactcctgt	540
tggcgcaaga	gcctgggtgc	cgtaggcaac	aattatcagg	gtataccgac	actggaaaat	600
gctgcctatg	aattttataac	cgatacctgg	ggcaaaattc	tggttgtttc	tctggaattt	660
gctccacgtg	atgaggcttt	ggcgtgggct	aagaaagtgg	tcgatgctcc	ccgctataaa	720
gaccataaag	tgatattgct	gacacattca	tatctggcat	ggacaggaaa	agtcattgaa	780
agcgagaact	acaaagtgc	tcctgccaat	tatggaaaag	ctatttggga	taagttgggtc	840
tatccggcaa	agaatatttg	tatggtgatt	tgcggtcacg	aatgtgagat	tgccgattat	900
aaggataatg	tcagtttccg	gattgataaa	aatgcttcag	gcaagaatgt	tcctcagatg	960
atgttttaatg	cgcagactgc	cgataagcaa	tggttcggta	acgggtggaga	cggatggttg	1020
aggattatgg	aattcatgcc	tgatggaaaa	acgattaaaa	tcaaaacatt	ctctcctctc	1080
tttgcacttt	ctcctcttac	ttgtgataaa	tcgtggagaa	cagattctta	tgatcagttc	1140
gacattacga	tagagtaa					1158

<210> 3164

<211> 1017

<212> DNA

<213> B.fragilis

<400> 3164

attacaaata	tgaactacga	agatatagac	catttactgc	ctcgatattg	tgaaggactg	60
gctacggaag	aagaatgccg	gcaggtggaa	agctggatgg	aagaatcgga	agataaccga	120
aagatagtg	atcaaatcaa	cactctttat	atagctgtag	atacgggtcaa	cgtaatgcgt	180
aagggtggata	cggaaaaagc	tctgaaaaag	gtcagtagca	gaatgatcgt	caggaaaaca	240
acttgggtggg	agtggatgca	gcgtgtcgct	gctatcttat	ttatcccgtt	gtccgttgct	300
tttctgggtgc	aatatatgca	caatgggaaa	tctgtctgtg	gccagatgat	ggaaataaaa	360
accaatccgg	ggatgacaac	ctcgggtggt	ttgcccgata	gtacgggttg	ctatctcaat	420

tccgagctctt	ctttacgtta	tccttctgtt	tttgaaggcg	atatacgaaa	tgtcgaatta	480
aagggagaag	cttattttgc	ggtagcaaag	gatttgaaaa	agaagtttgt	agtttccgcc	540
ccgcattcat	cgcagataga	agtgctgggt	acacacttca	atgtggaggc	ttatgaagac	600
gagccggatg	tttcgacaac	attggtggaa	gggcaggtct	gctttcattt	tagtgataaa	660
gactatctgg	ccaagaaaag	ggttatgaaa	cccggacaaa	ggttgggtct	cagttcgacc	720
aatgggtgatg	tacagttgta	cgcaacatcc	tgctgtccg	aaaccgcctg	gaaagatggt	780
aagattatat	ttaataacac	tccgttggat	gtagcactga	ggatgctcga	gaagcgcttt	840
aatgtaacat	ttaaaactaaa	gaatgcccg	ttgaagacta	atgcctttac	aggcacattt	900
actgaacagc	ggttggaaac	tattctggag	tattttaaaa	tctcgtccaa	gatacagtg	960
agatatttgg	aaagtcctga	tattcgggat	gaacgaagta	taatagaagt	ttattga	1017

<210> 3165

<211> 291

<212> DNA

<213> B.fragilis

<400> 3165

agaaaatccc	ggagcatggg	aaaaagcggc	agcagttcga	accggagcgt	taccatctct	60
tcccagaaa	aggatatcta	ccagggaagg	gattttgcgg	acctggaacc	gggagagttc	120
atcggatccg	ccaccctgtc	caatgtcaga	tacttcaagg	tgatgctcgg	ggagtttaaa	180
gaaaaggatg	aaaaaccgct	gcccagcgtc	cgggttctgg	aaccgggaga	aatatccggg	240
aattttgcca	ggatccttga	ggaggtacgc	tcccttttcc	catgtgaata	g	291

<210> 3166

<211> 306

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (142)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3166

gccccggtga	taggcatgct	tatgagcata	tccaccgcgc	agttcaccat	gcagaacaaa	60
gtgcctttcg	tatatttctt	ggatgaaatg	acaacgggtc	acattaaaag	tttcgagtcg	120
ctgctttcgg	tcatgcgcga	anacaaggct	gcctttgtac	tgcttacaca	gtccgggttc	180
aagctggaga	atctgtacgg	caagctcgac	cgttcatccg	tggaagccaa	tttcggaatc	240
cagttcttcg	ggcgtaccaa	ggatgtggaa	gccttgaaat	attatccgca	gatgttcggt	300
aagtag						306

<210> 3167

<211> 651

<212> DNA

<213> B.fragilis

<400> 3167

gcactctcgg	taccttccag	ccccgtgggt	aagacggcac	agatgaagaa	attcaccgcg	60
gaatgtatgg	atgaatatgc	ccgtaacttc	taccgtgaga	aaataaaatc	aggggatgac	120
ctggctctgg	acggccgcgt	ggaaacggaa	cgccactata	agaatgatga	tccggagggt	180
aaggccggca	gggcaaaggc	gggagataag	aagcccgggc	tccagcttca	tgtgcatgtg	240
atcgtttccc	gcatggacag	gacgcagacc	gtatcactct	ccccgctgtc	aaaaagcagg	300
ggaaaccggc	aggtacttga	aggcaggga	gtcgtggtag	gttttgaccg	ttcccaatgg	360
tcctcccggt	gcgcttcacg	cttcaaccag	tcatatgact	atttccctaa	ttactattcc	420
agggatgaaa	gcctgaggaa	gtactccgag	aactggcagg	ccaaaaacga	actgaagaac	480
gaggcggtat	caaagctcaa	acaggaaggt	ctcaaagggg	agctgaagga	agaaaggcgt	540
ctgtatgcca	acaccttccg	gatttaccgg	tttgtggtaa	acccaagaa	ggcaattatt	600
caggaaactta	aaaggctggg	gacggatctt	ctttccggaa	gggacctgta	g	651

<210> 3168
 <211> 1320
 <212> DNA
 <213> B.fragilis

<400> 3168

tacatcatgt	caaaaattca	gttacgccaa	gtctatagag	accagttgta	caactatcgt	60
cctacgtgga	tattaagatg	gggaataacc	atcttcttcg	tttttctttt	actgggttatt	120
tccgtttctg	gatttataag	atatccagat	attgtacctg	ctacagttga	aattacaacc	180
ataaatccgc	cagcaaatct	aatttccaaa	gtaaatggaa	aaatagaaat	catattcaca	240
gaagaaggag	aaagtataac	aaaaggacaa	gtccttgcca	tattagagtc	accagcacaa	300
tggaaaagaca	tgaaaatttt	agatcattac	attacagtcc	tagaaaacac	aattggaaaa	360
gatagccttt	cagtaattcc	cgaacccgat	tttttgcgca	atgatcttga	attaggagaa	420
gtacagggac	gctatgctga	tcttaagctc	aattatactg	agctatacaa	ttttctacat	480
tccggactat	ttgaagaaga	agtattgtca	ttacaagaaa	aaaagcaggc	acaaaagcaa	540
ttattagtag	aagagaatag	aaagagagaa	cttttaaaaa	cacaaatcag	acttgcagac	600
aaagaatatc	aacgagattc	cattctgttt	gtaaaggaag	tcatttctga	aagtgaataa	660
gaacaaagac	acaaaaacag	gcttcagttc	caatcttcac	ttgtagatat	ggaagtcaac	720
atattgaaca	ttaaatcctc	attaaaacaa	ctacgctctg	atctaaaaaa	aatagaatta	780
aagcataaca	cgcacaggca	ggagctaaca	aataaaactt	tacaaagcac	gcacttatta	840
aaagcgcaaa	cggaaacttg	gaaacaaaat	tatttaatta	ctaccctat	agatggtaaa	900
gtaagtttita	ccatatattg	gagtaagaat	caaaacgtca	aatcagggtga	gcttattttt	960
tctgttggtc	ccattgattc	tatgacaaca	aaagccagac	tacaatttcc	catacaaaa	1020
tccggaaaaga	taaaagaagg	acaacaagtc	aacatcaagt	tacaaaatta	tccatatcaa	1080
gagttcggaa	tgtagtgagg	tcatctatcc	aaaatatcag	aagttcctaa	tgaactatta	1140
tatagtgcag	acgtagtttt	agataaagga	cttattacgt	cttacgggaa	aagacttcc	1200
aaagtgcac	aactgaaagg	agatgctgaa	atcctaagag	acgatttgag	tctattaatg	1260
cgttttttca	atccattacg	ggccattttt	gatcacagat	taagaaaaca	taatcaataa	1320

<210> 3169
 <211> 1326
 <212> DNA
 <213> B.fragilis

<400> 3169

ctttgcatgt	caatgaataa	acaaatgcac	atcagtaacg	gaaacaaaacg	gattctgcaa	60
atagccgttc	cctctattat	ttccaatatc	acagtcctcg	tattgggact	ggtcagatgc	120
actattgtag	gacatctggg	atcgcccgcc	tacatcggag	ccattgctgt	aggtggcatg	180
ctgttcaaca	tcatttactg	gatattcggc	tttctacgga	tgggcaccag	cggcatgact	240
tcccaagcat	tccgacaacg	taatctggaa	gaagtaacaa	aactgcttct	acgttcagtc	300
ggcgtgggat	tggttatcgc	actctgtctg	atgactctgc	aatatcccat	ccaaaaagcc	360
gcatttgctt	tcatacagac	ttccgacgaa	gtagaacgtc	tggccactct	ctactttcgt	420
atctgcatct	ggggggctcc	tgccatgctc	ggcctttacg	gttttgccgg	ctggttcatc	480
ggaatgcaga	attcccgttt	tccgatgtat	atcgctatta	cgcagaatat	tgtgaatata	540
ctggcaagtc	tttggtttgt	attccttttc	ggaatgaaag	tagaaggagt	agctctcgga	600
acgcttatag	ctcaatatgc	aggtttctcg	atggctctgc	ttttatggct	acgttattat	660
aaacaattgc	ggaaacgagt	ccattggaga	ggcatttggc	aaaaacaagc	catgtatcgg	720
ttctttcagg	taaatcgcca	tatttttctc	cgtactttgt	gcctggtagc	tgtaacgatg	780
ttcttcacct	ctgccggagc	cgcccaaggc	gaagtagtac	tggctgtaaa	cactttatta	840
atgcagctgt	ttacctctct	ttcatatatt	atggatggat	ttgcctatgc	aggcgaggca	900
cttgccggtc	gttatatcgg	cgccggtaat	cgtatggagc	ttcaccgtag	cgtccgacag	960
ttattcggat	gggggtgtcg	attatcagcc	gggttcaccc	ttctttacgg	tattgggtgga	1020
caatcatttc	tgggattact	gacaaacgaa	tcattccgtta	tccaggaagc	cgacacttac	1080
ttttattggg	tattatccat	tccccctggc	ggattttccg	cctttttatg	ggatggcatt	1140
ttcatagggtg	ccaccgctac	ccgcagatgc	cttttctcca	tgttcatcgc	ttctgccagt	1200
ttttttctta	cctattacat	cttccaagaa	gtaatgggaa	atcatgcctt	gtggatggct	1260
tttattatct	acctgtcgct	tccgaggactt	gtacaagctt	ttttagcaaa	aaagatagtc	1320
cattaa						1326

<210> 3170
 <211> 348
 <212> DNA
 <213> B.fragilis

<400> 3170
 aaatatttgt ttatgggact ggaagacgat tttttgttaa atgacgccga tgatgaaaag 60
 accatcgagt tcatccggaa ttatttgcct caggaattga aggaaaagtt ttcggaagac 120
 gagttgtact atttcctcga tttgattgat gagtactact ctgaaagcgg aatcctggat 180
 gttcagcccg atgctgacgg ttatgttgac atcgacttgg agcaggtagt agaattcatc 240
 gtgaaagaag ccaaaaaaga tgaagtgggt gaatatgacc cggaagatat cttatttgtg 300
 gtgcaggag aaatggaata cggcaacttt ctgggacagg tggagtaa 348

<210> 3171
 <211> 1257
 <212> DNA
 <213> B.fragilis

<400> 3171
 ttgctattgt tagatactat agattcagta ctcataatta tttctcttga ttattatatt 60
 attcataata ttgaaactcac gttaaataata aataaaatga aaaagatcaa tgcggctttg 120
 gtaatatctc tgtttgtaat gacaggatgt ggaggaaata aacaactgac agatgattgc 180
 atcacggttg atgttagtgc ggattatcct aaaaaggaaac tgatccttca agattttatg 240
 gatgtagaat acgttccgtt ggaaactact gacgatttta taactcaagg tattgtgaaa 300
 gctaccggta agaaaattct gttggttgca aacagaatta tggatggtaa tatttttgtg 360
 tttgacaggg ctactggtaa agggttacgg aagattaacc gtttgggaca aagtggtgaa 420
 gaatattcgc atattacgtc tattgttctg gatgaagata ataacgaaat gtttgttgta 480
 gattatcctg caaggaaaat attggtatat gacttatatg gagagttcaa tagaagtctc 540
 ccatttccag atacctgcta ttatgagttt ttatcggact atgaccggga tcatctgatt 600
 gggtataaaa gttatttgcc attgatagaa accgacgaat catgccatgt acttatttcc 660
 aagaaagacg gaagtgttac acgaaaaatt caaatccctt tcaaagaact cgagacaccg 720
 gttgtgacga aagatgaggc gatagtgact ccagtttttt ttctgataac cccgcatgat 780
 agtaattgtc tgctgacgaa aacatcatct gatacaatat acaattactt accggatggc 840
 actctcagtc cgtttattgt acggactcct tocatcatt ctatggatcc taaagtattt 900
 ctttttccga ccattatcac tgatcgggat tattttatgc aaactcttga taagaagttt 960
 aattttgaaa aggggagagg tttcccagacc aatgatttag tgtatgataa acaggaaaaa 1020
 gcaatatttc aatataccgt atataatgat gacttttcta ataaacaccg ggttgcattg 1080
 ggacagcaac ccgaaaaaac tgtagatgaa gaaattgtaa cctgtcgtgc tttaaatgct 1140
 tcagaccttg tcgaggcgaa cgaaaaagga gaactgaaag gtaagctaaa agaaattgct 1200
 gccggactga atgaagaatc gaattcgggtg attatgttga taaaacgcaa gaaataa 1257

<210> 3172
 <211> 312
 <212> DNA
 <213> B.fragilis

<400> 3172
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 atattggaaa taatagaggg aacggctatt tgcagaatcc gtttgtttcc gttactgatg 120
 tgcatttgtt tattcattga catgcaaagt tacatgaaaa acagagaata tgaaaatgat 180
 gtgaacaatc atgtaattat attggttcgc aacgttctcg atacaggaat taatattatt 240
 tttgtctgca tattgaaaga tatcttacag acaattaaca aacatcgag cgaggtagca 300
 ttatcaattt ga 312

<210> 3173
 <211> 786
 <212> DNA
 <213> B.fragilis

agtgggaagta	cccaataaat	tatgttctctg	accaaacggtt	tctatatact	cgctccttgtc	60
gtcaccctct	tgtaggtgg	cggatacctg	ttcggttctc	tgtttatcat	cggacagtta	120
gggctgcttg	cgtctctgt	tgctctggct	ttcgaatgat	atctgttgta	tcgcaccaag	180
ggtatccagg	ctttccgtca	gtgtgccgga	cgtttttcta	acggtgatga	taacgaagtc	240
agcctgcgta	tagagagccg	ttattcctat	cccgctcgtt	tgatcgtgat	agatgaagtg	300
ccggtcatat	ttcagcaaag	gaatgtacac	ttcgaactgt	cgcttttacc	taatgaggga	360
aagacgctta	cctatcgggt	gaggccgact	cgcaggggag	aatacgggtt	cggattcatc	420
cgcgttttta	cgactacccg	aatcggatta	atatcccgca	gggctacctg	tggcagacct	480
gaaaccggtta	aggtatatcc	ttcttacctg	atgctccatc	gatacgagct	gctggctatg	540
agcgataaac	tgaccgaact	cggatatcaag	cgtattcgtc	gggctgggca	tcagactgag	600
tttgaacaaa	tcaaagagta	tgtaaaggga	gacgattatc	gcaccataaa	ctggaaggcc	660
agtgcacgcc	gtcatcagtt	gatgggtcaat	gtctatcagg	acgagcgcag	tcaacagata	720
tacagcgtga	tcgataaagg	gcgtgtgatg	cagcaggctt	tccgtggcat	gacattgctg	780
gactatgcca	tcaatgcctc	gttgggtgctt	tcgtatgtag	ctatgcggaa	ggacgataaa	840
gccggggctgg	ttacgtttaa	cgagtatttc	gatacgtttg	ttcctgcttc	caagcaagtc	900
ggctcagatgc	agactttgct	tgagaacctc	tataaacagg	aaacaacatt	tgggtgaaacg	960
gacttttctg	ccttatgcgg	gcacttgggc	aagcatgtga	ataaacgtag	ctttctggtg	1020
ctttataacca	attttagtaa	tatgaccagc	ctgaaccggc	aattagttta	cctgcaacaa	1080
ttggcccggc	aacacagagt	attggttgta	ttctttgagg	atgccgatct	gaaagagtat	1140
atagcgggca	agtcgggtgac	taccgaggaa	tattaccgtc	atgtcatcgc	agagaagttt	1200
gcgttcgaga	agagactgat	tgtgtcaact	ttgaaacagc	atggcattta	ctcgtctgtg	1260
acaactcctg	ataagctgtc	gattgatgtg	atcaataaat	atctggaaat	gaaatcgcgc	1320
cagttactct	ga					1332

<210> 3176
 <211> 867
 <212> DNA
 <213> B.fragilis

<400> 3176
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 ttggaaagaa tgagccaatt tgaagctaatt cttgtctcaat taatctcaac cggaataccc 120
 aatcacactc cctctccagc taccgatgag gcgacatcct cccccaatga acaggaacaa 180
 ctttctcccg aacaagaaga agaaatgaaa ttaaaaatcc aagagcttca acaaaaagaa 240
 gaagagttga atctacgtgc tgaaaagttg gataaattag caaaagaact tgaagaacgg 300
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<210> 3177
 <211> 723
 <212> DNA
 <213> B.fragilis

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<210> 3178
 <211> 1989
 <212> DNA
 <213> B.fragilis

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<210> 3179

<211> 2796

<212> DNA

<213> B.fragilis

<400> 3179

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tttcgtacca	tcgccaggaa	gtattacact	aaagacgaaa	ctacattttt	agtattccaa	300
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agtcagagt	gtgacgtgta	ttctccaggt	acttatcagt	acgagatatg	gtacgaggga	2760
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<210> 3180

<211> 1326

<212> DNA

<213> B.fragilis

<400> 3180

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caaaataaga	tccgcacott	tctttccgga	ttcggcattc	cgtggggaat	cctgatattg	180
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ccggggataa	aagctat	gcctgaaata	acaggacott	attcgcaagt	gatgaataaa	420
gctaaaagcg	gactttttta	gattatagga	atcaatgaaa	actatatggg	aattaagata	480
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<210> 3181

<211> 738

<212> DNA

<213> B.fragilis

<400> 3181

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attcttgcca	cttcttatat	attggggaaa	ctcaatatac	atgctttttc	cggaagtacg	180
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gccgacctgt	ctttggaaca	aataaacgta	atcagtaaag	cattagaatt	acatcataag	600
gatcggacaa	gacatatcgc	acaattggca	cccaaagttc	gtgccctgct	atctgtagat	660
caaacaaata	taaacgatga	aaaatttctt	cagaccgttg	taagagacta	ccaatactat	720
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<210> 3182

<211> 1809

<212> DNA

<213> B.fragilis

<400> 3182

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tcttttgtct	ttttcgcaac	gacatggagc	ggaatgaaag	aagattggag	cagaaacagc	180
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<210> 3183

<211> 711

<212> DNA

<213> B.fragilis

<400> 3183

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gccaaagctt	gtatagcgga	agctcatccg	gatacatttg	tacttgatgt	ggagatcgga	180
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gtggccttato	ttaaaaagcc	ctttcatgct	gaagaattaa	ttgcgtatgt	tgaaagggttt	360
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aaataccttg	ttgccgatcc	cgacatcgca	cttgaaacga	taccgaggag	cggatatagg	660
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<210> 3184

<211> 756

<212> DNA

<213> B.fragilis

<400> 3184

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gttttaaaatt	atgtatatag	tcctatatat	tacattatag	ttgctatttc	aatcatgtat	720
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<210> 3185

<211> 1098

<212> DNA

<213> B.fragilis

<400> 3185

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tcagatggaa	attatgtgga	agtgataaag	gggatttcat	taaaggataa	aatagtaact	1080
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<210> 3186

<211> 1062

<212> DNA

<213> B.fragilis

<400> 3186

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gaaaaactca	tggaatcaca	aaaacctaaa	attgctttat	atgtgaagcg	tccttttggt	180
gataaactga	atgcgaccat	ggactttata	aaagagaact	ggaaaccgat	gttgaagttc	240
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atattttctt	tgattggtat	ggtatatcaa	tacggtcag	ccagtgaagt	ggtagatagc	1020
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<210> 3187

<211> 291

<212> DNA

<213> B.fragilis

<400> 3187

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tcagggttcag	atcgtaacgg	acccaataat	aattcaggaa	gcagaagata	ttaccaccaa	180
actcaggcta	atgataaaga	agaaatcatc	actgggacag	gagccaagca	caaaaaactg	240
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<210> 3188

<211> 729

<212> DNA

<213> B.fragilis

<400> 3188

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caaatacaag	agattcatga	acaaggcgta	caaatcggca	tcgttatcgg	tggtggtaac	180
atcttccgtg	gactgagtgg	agccaataaa	ggtttcgatc	gggtaaaagg	tgaccaaattg	240
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<210> 3189

<211> 1410

<212> DNA

<213> B.fragilis

<400> 3189

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catcatcggg	cgaaggtcgg	caccgtagaa	tgcactgttg	atctgtgctg	tctcgtcact	180
gttgttactt	ccgtaaggag	catcccggta	agtgttggtg	tagacggtct	tcaaccgcac	240
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aagcggagaa	cccgtaacgt	caagaacaca	accggttatt	ttctgtttct	gctgttctac	1320
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<210> 3190

<211> 624

<212> DNA

<213> B.fragilis

<400> 3190

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aatccggatt	atgactataa	ccgtgaactg	atgactcctg	agattgatat	ctacgggtgg	120
ctcagtatgc	agctctccaa	gttacttcgt	gccattttcg	gaagtcggtt	tgctgaggag	180
tattccggca	ttatcctgat	tattattgct	attctcatcc	tgttgctgat	cctctggttt	240
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gtccacgaag	ataccattta	cggagtcgat	tttgatgcag	agatcaggcg	tgccatagac	360
cgcaaggatt	accggggaggc	catccgtctg	ctttatttgc	agacccttaa	actgttgagc	420
gatgacggcc	ggatagattg	gcaactttat	aagactccta	cagaatatat	ttatgaggta	480
aagcaggaga	tacttcgtac	tcttttcagg	aatctgacct	atgggtttct	acgggtacgt	540
tatggtaatt	ttcccgcttc	cgagtctctt	tttgaagagc	tggcagctct	gcaaactcaa	600
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<210> 3191

<211> 258

<212> DNA

<213> B.fragilis

<400> 3191

cttcttttcc	tgaaagaagt	taatgttttg	atgataaaac	cggaatatatt	atccgagaag	60
ataagaaaat	tcgcatacaa	ataccctatt	tatgtatttc	actcctctat	taggacgatt	120
tcgaaaaaag	accgcgttat	taaaagagag	ataaaaatat	ctttttcatg	caaaaacgca	180
aataaacaaa	tctatttgca	caactatttc	tctctgcgta	ctcgtgataa	gatttatcca	240
tataacaaaa	agacatag					258

<210> 3192

<211> 498

<212> DNA

<213> B.fragilis

<400> 3192

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caaattggcac	aaattaagaa	tgogaacatt	cttctcatct	caaaagatga	aatgaaatta	180
cgcttaatat	actataaggg	ccaagaatta	ttcactgccg	acatagcttg	tgggaagaat	240
tatggcaaca	aggaaaaaca	aggagattta	aaaactcctg	aaggaaacttt	taaaataatc	300
gatatccaag	atgcttctaa	atggaaacac	gattttggag	atgggaaagg	tgaaatagag	360
ggtgcatacg	gtaatcattt	catccggtta	gaaacacccg	gacataaagg	gaattgggat	420
tcattggcacc	cacgacccat	tatctattgg	gacccggagc	gacccgagga	tgcattcgaa	480
tcaaaaattc	agaattag					498

<210> 3193

<211> 573

<212> DNA

<213> B.fragilis

<400> 3193

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cgcttgctgg	atggatccg	tgtagactct	tacggaagca	tggtagccat	cagcaacgta	180
gctgccgtaa	ccactcccga	tgacgcagc	atcacgatta	aaccttggga	taaaagcatg	240
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ggtgaaatta	tccgcatcgg	tattccacct	cttaccgagg	aacgccgtaa	gcaactcgcc	360
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gcagaagcta	aactgcagaa	ggttcattg	aaatacattg	ccaaaattga	agaaatgctg	540
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<210> 3194

<211> 1302

<212> DNA

<213> B.fragilis

<400> 3194

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ctggataata	aagatgatag	caatgatata	acccttata	gtaaatctca	aatcatctc	180
agtgattatc	tatatatccc	cccgtaagat	catataaaaa	cagaagaagc	agagattatt	240
cttactttatg	gcaaaaacagg	tttgagccac	attagtcaat	ttgcaagaaa	atcaaataatc	300
ccaatcatac	acttcataaa	tacagagtat	ttaaaagacg	aatattttaag	tgaagaccaa	360
caagtagaaa	aaataataact	ttgtgattgc	ttcaatcagc	tcttggagag	tttctttcaa	420
aaagacaaaa	tgtttgtctt	accatatttt	tctataccag	tcgttactaa	aaatgtagaa	480
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tcaccggctc	attatatcag	taacttatta	aatattttat	cagactatag	aatcacaata	600
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ttggacaatg	agtatcgcca	aaccagcaa	tcgcttaacg	acttaatttt	agaagtagca	1020
gccaaaccaca	aacaattata	tacgttccct	atggaaattc	accttaggtt	atcggatgct	1080
tttcacctta	ttaaattttc	tgataccaaa	tttgtattag	cttatacagc	caacaacaaa	1140
gtccattcaa	gttttggttaa	agaagaagct	gaaattatag	ccctttttta	aagaagttgc	1200
tttaataaaag	atgctataaa	tatgagtcca	tacaaaaagg	aacctaaaat	atthgtggag	1260
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<210> 3195

<211> 1086

<212> DNA

<213> B.fragilis

<400> 3195

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atgacaggca	aacagatcaa	taaaagggtt	ctgaacgtaa	acgccaaaat	cataaaacca	180
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<210> 3196

<211> 204

<212> DNA

<213> B.fragilis

<400> 3196

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gcagataacg	gaaaatactg	tattggaatt	acatatattg	atagaatgat	agaaatagga	120
ctcagtatat	ttaatagtat	cttattcctt	ttagtcgtta	aattgataat	agatcctgat	180
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<210> 3197

<211> 201

<212> DNA

<213> B.fragilis

<400> 3197

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ttgccggtcg	ttatatcggc	gccggtaatc	gtatggagct	tcaccgtacc	gtccgacagt	120
tattcgggatg	gggtgtcgga	ttatcagccg	ggttcaccct	tctttacggg	attggtggac	180
aatcatttct	gggattactg	a				201

<210> 3198

<211> 351

<212> DNA

<213> B.fragilis

<400> 3198

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gagaataaca	cttggaagg	tggttatgtt	gatggttatg	gttatgcagc	cccggctgta	180
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<210> 3199
 <211> 561
 <212> DNA
 <213> B.fragilis

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 aatagtcccg ccaacaaaac cttatatattt ttgtataaca aagataaaca cagtgcattt 180
 attaccattt taaaaaacia tatgcaaggt tgcacccctaa atgtattagg aggaggggta 240
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 tcaataaata tgtaacatg a 561

<210> 3200
 <211> 813
 <212> DNA
 <213> B.fragilis

<400> 3200
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<210> 3201
 <211> 1257
 <212> DNA
 <213> B.fragilis

<400> 3201
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 aatgccgtat cgaacgtact caatctgagt ttctttaacg atatggataa ggaactggcc 660
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gatccggagg	tgtggtcggt	tactttgtac	ggcaccttct	acaagccgat	ctccactttc	1140
tctcagtatc	ttcagccgca	attgcgcgat	gcctatcaac	tgggtgatcc	gaaacccctt	1200
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<210> 3202

<211> 663

<212> DNA

<213> B.fragilis

<400> 3202

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gagaagatgc	ctaaatggta	tggcttttta	actatattac	tatatagctt	attactcgca	180
gaatttttga	taactactaa	tcatcttctg	aataataaca	atttagagac	tgacagatta	240
tttgtaattc	tggcacggat	gagttatatt	ataatagtct	tgtcagctat	tgtaatatgg	300
cttatctcca	cttttctctt	tcacctaaca	gccatactct	ttaatgggta	tgctccattc	360
aaacatcttt	tatatatttc	gtcttatttc	tatattattc	ctgccatttc	tgtttttatt	420
tccatcttcc	ttcttaatca	gaaaacggaa	tatagtactt	ctaattgcgt	aacgacctta	480
caaaataatt	attctcttgg	tctccccata	atgttgggta	actattcttt	tatccccat	540
tatttgctgt	gcatgatatt	aatccatcat	ttatataagg	tacggctgcg	gtatgccatt	600
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<210> 3203

<211> 318

<212> DNA

<213> B.fragilis

<400> 3203

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gtaagacgtt	ggttgtttct	tgactttttc	gtgaagcagt	attttttgct	tttcgacctg	180
ttggggcggc	tggtatgtca	gggaaaccat	ggcagatata	aacataactt	ttgtcttaat	240
ctgcattgca	atgttctgtt	tttattagca	gtgtttacat	gtttagttat	tcttatttta	300
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<210> 3204

<211> 306

<212> DNA

<213> B.fragilis

<400> 3204

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gcaactgttg	caatgactta	tgctgccgga	actgggtgaat	atggctctga	agcatcagga	180
aagtttagctg	ttggagcatt	agcaatggga	aaagtaacag	aaacattagg	tacttgtgct	240
gttggtctag	gctgggtgtc	ggcaggttgg	atagccggag	taggagccgc	agcagcagga	300
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<210> 3205

<211> 2223

<212> DNA

<213> B.fragilis

<400> 3205

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aactttccat	cttacattca	acatgaccaa	atggattgtg	gaccagcctg	tctgaagatt	120
atagcccaaa	attatggcaa	gagattttca	ttgaaatatt	tgagggatcg	ctggtatgca	180
actcgcgaag	gcgtatcatt	gttcgacatt	ggccgggcag	cagaagagat	tggtttccga	240
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tcccctttca	tatcccaatc	cattgtagat	ttcggcattg	ggtccggtaa	tatccaattt	660
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aacgatctat	tgggaattatt	agaaaatgtg	aacgaaataa	agataaataa	tatcgcgaac	1140
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gaagaaccag	aaatatctga	atcaaaagtt	tccatttcta	tagaaaaagg	cgttaagggtg	1500
aaagatttag	atttttacta	caacccta	ttaaacaaag	tattagacaa	tataaattta	1560
gagataccgg	agggaaagat	tacagctatc	gtaggggaaa	gcggaaagcgg	taaaaccact	1620
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aacgtaaatc	aaaaacaact	agtgaagcgg	attcaactgg	caaacgcaga	aaatttcatt	1860
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gaaaccatct	tagaaggaaa	aaccgccatt	gtaatagcgc	accgattaag	tactgtaaaa	2100
aatgcccata	atatagtggg	catggaaaag	ggaaaaattg	tggacaagg	gactcatcaa	2160
gaacttataa	atttaaaagg	aatatattac	gacctaattt	ctagtcaatt	agagattgga	2220
ttaa						2223

<210> 3206

<211> 1338

<212> DNA

<213> B.fragilis

<400> 3206

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gatattttta	ttgatttgct	tggcaaggcg	gctactggat	ttatggaaac	gaatacgctt	180
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gaggcacctg	cttttttggt	gattggcaat	gcggaagaaa	tagcttttaa	cgttgacgta	300
aatgatagta	tggctattct	ttcattaaag	acatcttcag	tacaaactgt	tccgtcagaa	360
gctattaata	ttacacttaa	tcctaaagcg	attaaaggca	aactcagaaa	aggtatgaac	420
acaaccggta	ggttgagttt	tcattccatca	gagatttcta	ccgtatttaa	atcgccgata	480
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ctgggcaggt	tcattggcag	ttatggttat	tatgagacaa	aggcttcatt	tagagactgt	780
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cttcattggt	ataaaaaaca	agcaatggag	gagcagcaat	cagaagtgca	acatgcagct	960
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ttggatgaag	ctcagagtaa	agagcataca	tttgctgtgg	aatggacccc	cgaagaactg	1080
attttctaca	cagatggtaa	ggttaccctg	cgggtgaatc	ggaaagatga	tcccaaacia	1140
gtgccaagtg	cttaccaaat	ggtttatttc	tcttggtccg	caggagaatg	gggaggtaat	1200
gtgatggaaa	atcaagtacc	tgcctatgtc	tattttgatt	attgcagatg	ttatcaggaa	1260
agtgatcagg	atgctattta	caccgttaaa	ggtaatggga	tgaaagtttc	ggcagaccgg	1320
cgtgtgggaa	agctctga					1338

<210> 3207

<211> 450

<212> DNA

<213> B.fragilis

<400> 3207

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cctataaata	taaaaatctt	ctttatggca	gaacacaccc	ttctaggaaa	agccggagag	120
gacgccgccc	tgcactatct	ggaacggcat	gactacgtaa	tccggcatcg	taactggcgt	180
aaaggacatt	togaactgga	cattgtggca	gctaaaaacg	gagaactgat	tattgtagaa	240
gtaaaaaccc	ggagcgatac	ggactttgca	cttcctcaag	acgccgtcac	tccacaaaaa	300
atcaggcgca	ctgtaatagc	agccgataca	tatatcaagt	tattccaaat	agatgaacct	360
gtacggtttg	atattatcac	cgtgataggc	aaaaccggaa	attttagaat	tgaacatata	420
aaagaggcgt	tttatccgcc	attatttttag				450

<210> 3208

<211> 363

<212> DNA

<213> B.fragilis

<400> 3208

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tgcttcccat	tgcacgaata	ttcactcgct	atgaaagtaa	tggataaaat	gttcgccctg	120
atcgatctgg	aagggggcaa	tacgatttca	ttgaaatgtg	atccggacta	tgccatcgaa	180
ttacgtgagc	actattcggc	catcgaagga	gcttatcatt	ttcacaagaa	gtattggaat	240
caagtctact	ttgaccggga	tgccgatgac	aagctgatca	agcaactgat	agatcattct	300
tacgacgaag	taatgaagaa	atttaccaaa	aaattacgta	ccgaatatga	tgccttacc	360
tga						363

<210> 3209

<211> 699

<212> DNA

<213> B.fragilis

<400> 3209

ataaaaaatga	agaagatgaa	aaccttgact	ttattttctt	ccttgctctt	ttctttcccg	60
tttgtgcttt	cggctcagat	ggtgggagag	acttttgaga	aggtctctgc	tgcccttgat	120
aacagacagt	gggaccaagc	tggtactttg	ttccgcccaag	cggtaaatac	caatgtagag	180
aaagccgaaa	tgttctattg	gacagggtgtg	gataagagtc	tggaaagtac	atccaggatg	240
ggcggggaac	tggctgctta	ttacaaaaaa	tcacgcagct	atgacaaaagc	gtatcttttt	300
tataaagagt	tgtttcaaaa	atctccgaat	gatgttaatt	gtcttggtgc	atgtgctgag	360
atggaagtat	gccgtgggag	ggagtctgaa	gcttttgaga	cttaccggaa	agtactgtca	420
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gagagagaga	aaaaacagtt	agaagccgat	tataaaaaaga	ttagtgtctc	caactcgatg	540
cagtatgcac	gctatcgtga	tggtcttagc	cgtgtgatga	gtaccggata	cggaaaggca	600
agggaatatc	ttcaaaaagg	gatcagtcaa	ttcccttcta	ctgaagctca	aaagacatta	660
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<210> 3210

<211> 2070

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

(135), (1301), (1345), (2035), (2048), (2049), (2050), (2051), (2052), (2054), (2058), (2059)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3210

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tcggacgagc	cgaantgggg	ccctgccgac	atcaaaagct	acatgaagat	gaatgggtgta	180
cccatggtgg	gaatcgttgt	aatcccccag	cggggtgcca	accatataaa	gatagccgat	240
gcggtatatg	aacgcgatgga	gaagatgcag	aaggacctcc	cggaagacgt	gaagtattct	300
tacggattcg	ataacaccaa	attcatccgt	gcctctatca	gcgaagtga	agaaaccgtt	360
tacgtagctt	tcatcctggg	tatcattatt	atcttccttt	ttctgcgcga	ctggcggtgtt	420
acgctggttc	cctgcatcgt	gattccggta	tcgttgatcg	gtgctttctt	cgttatgtat	480
ctggcggact	tctccatcaa	cgtgctctcc	atgctggctg	ttgtgctggc	agtgggtctg	540
gtggtggacg	acgctatcgt	aatgacggaa	aacatctatg	tccgcattga	gaaaggtatg	600
cctccgaaaag	aggccggcat	cgaaggggct	aaagagattt	tcttcgctgt	catctctacc	660
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gcacgtatca	atatcaatcg	cgacaaagcc	agcatcatgg	gggtaagtac	acgtaacatc	1500
gcacagaccc	tgcaatacgg	tctgagcgca	cagcgaatgg	gctacttcta	tatgaacggc	1560
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gtttccgccc	gactggccga	aggaaaaacc	atcggacaag	gattggacga	aatggacaag	1800
atagccaaag	agacgctgga	cgacacgttc	cgcacagcat	tgaccggtga	ttcgaaagaa	1860
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ccctgggcta	ttgcaggcgc	attgggtcttc	accacggggc	tggaagggtc	cgaacnggtgc	2040
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<210> 3211

<211> 561

<212> DNA

<213> B.fragilis

<400> 3211

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gagtcacttt	atgctttttc	acatgggaat	acttatcctg	cggtggcggt	tccctgggga	180
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gtacctttct	cacataccca	agaggaggcg	gtccctaca	gttacagcgt	tacgtttgcc	420
gacggactcc	ggacagaact	ttccgctact	tcacgoggag	cggtattcga	agtcaccttt	480
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<210> 3212
 <211> 1578
 <212> DNA
 <213> B.fragilis

<400> 3212						
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acagagttca	aaaaagtatt	accacataat	gcaccctatt	tacaacgaaa	cggatttgag	180
gtaatcattg	tcctagatga	ccccgatgaa	aagtcagaac	ttctaattgct	gcttcaaaat	240
tatccattca	taaattggaa	gctaattatt	aatgaacgaa	aacatgctcc	tcgcaaccat	300
gcttccgtac	taaatgtagg	actcaagcat	gctacaaaa	agtatatcct	acaaatagat	360
cctgaagtag	aattcctcac	tgatattata	tggcaaatga	gagatgccat	agagaaatat	420
cccatgcact	atatcctcgc	aatgatggca	tatgtaccct	atgagcagga	acttacagaa	480
aataatataa	aagagttgga	ttttatcccg	tggggcaatt	tgatggtaga	acgtaaccat	540
ctatacaaat	tacatgggta	tgatgaaaca	ttcatcacat	ggggtggaga	agataataat	600
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ggaagtgaat	ttaacaaagt	catttacgac	tggcaagaca	atcaatatgc	aaaagacttg	840
tgctatacat	atctacagca	atttatcggt	ttcgaaatca	gacaccccg	cgcatttcgg	900
aaaaggcaca	aaaagatagt	cctctgccaa	gcgtacaacg	aagaaaaact	gatagaaggt	960
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agtgggttca	acgattttaga	gaatagaaat	atattactcg	atttaagtgc	cttcttccaa	1140
tcogaatggg	tttgttttat	ggatattgac	gaaagatttg	atgagagatt	taccaatttt	1200
tcagaatttg	agaataataa	agagatacat	gtggtaagtt	ttaggggtgt	gtatttatgg	1260
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<210> 3213
 <211> 225
 <212> DNA
 <213> B.fragilis

<400> 3213						
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ctcttctttt	ctgtttttct	aatttcacag	aaagcctata	tcgctcctc	gggtatcgtt	180
caagtgcgat	gtcgggatcg	gcaacaaggt	attttcgtat	cttga		225

<210> 3214
 <211> 468
 <212> DNA
 <213> B.fragilis

<400> 3214						
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aacacggctc	ttgcactcta	cggaaagatg	ggagcaggta	aaacgacttt	tgtcaaggca	180

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<210> 3215

<211> 1596

<212> DNA

<213> B.fragilis

<400> 3215

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<210> 3216

<211> 1254

<212> DNA

<213> B.fragilis

<400> 3216

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<210> 3217

<211> 3219

<212> DNA

<213> B.fragilis

<400> 3217

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<210> 3218

<211> 822

<212> DNA

<213> B.fragilis

<400> 3218

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taccgcctga	atgttccctc	gggagcatcc	atcatcttct	tttctattct	tatctatatt	780
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<210> 3219

<211> 261

<212> DNA

<213> B.fragilis

<400> 3219

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gtttttacgt	ctaccatctt	attaagtatt	tataaaattg	gcactttgat	tcatthtgaa	180
aacaaaagta	gattatthtt	tgattatctg	caactatcta	tagagagaaa	tgcgttgcct	240
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<210> 3220

<211> 450

<212> DNA

<213> B.fragilis

<400> 3220

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ctccatccta	aaacagttgt	tgtcaaagga	atattggctg	atgagtgcgc	cgggctgatg	420
aaagacttht	ttgctgctaa	gaggaggtga				450

<210> 3221
 <211> 1293
 <212> DNA
 <213> B.fragilis

<400> 3221

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<210> 3222
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 3222

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gagcagcaga	ttgtggatcg	ttatctggat	aagtataaga	taacgaataa	atcacgctgg	180
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tttggtgaac	acgatatgag	gcgttag				267

<210> 3223
 <211> 255
 <212> DNA
 <213> B.fragilis

<400> 3223

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<210> 3224
 <211> 198
 <212> DNA
 <213> B.fragilis

<400> 3224

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<210> 3225

<211> 279

<212> DNA

<213> B.fragilis

<400> 3225

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atactcaact	ggaactgggt	ctttaccgct	caaaatgcac	aactgatcgt	acggaatgtc	180
ggcagaggac	gtgcccggct	gttctacgga	ctactgggag	tcattatgat	aggtatggct	240
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<210> 3226

<211> 936

<212> DNA

<213> B.fragilis

<400> 3226

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<210> 3227

<211> 3198

<212> DNA

<213> B.fragilis

<400> 3227

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catgtgcgtt	tttacgttaag	cggacaaaac	ctgctgacgt	tcgatcacct	gtttgacata	3120
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<210> 3228

<211> 432

<212> DNA

<213> B.fragilis

<400> 3228

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tttccggaag	taaaggaagt	cgacgtagag	tgctgcggac	agcacgaagt	ttgcgaacgt	180
gacagcctgc	tggtgccgt	cagcaaacag	atagagtatt	atgacgacga	agaactggat	240
acatttatcg	gccgggcacc	cgaagattat	acaccggaag	aggcggataa	attccgcgat	300
gtcttttata	caatgcagga	caccgatgta	gccggatggg	tacgtagcct	gcaactgagg	360
gggatcagcc	ttcctgatga	aataaaaagac	gaagtgtttc	tggtagtccg	cgaacggaga	420
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<210> 3229

<211> 222

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (11)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3229

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cggaaagaac	ttcactgtga	aggcggcaag	gcaatagccc	ggcgaaccgg	tatatcgga	180
aagccctgct	caatgaaagt	gaatttacct	gtaactacct	ga		222

<210> 3230

<211> 201

<212> DNA

<213> B.fragilis

<400> 3230

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ttgttaatgt	tgatttgtat	cgttaaatgg	gattcactac	ttatatctat	aatttgttta	180
tgtttgccgt	ttttctgttg	a				201

<210> 3231

<211> 723

<212> DNA

<213> B.fragilis

<400> 3231

cgaacagata	tggtggtgac	aaaaataaaa	atatcagcga	tgattttgac	gtgcatgttg	60
tataatgcc	tgaacacatg	cgcacgaagc	gtagacattt	ccataaagg	gtgtaagtat	120
agcatagatc	tcccttcggg	atgggatacc	attcctcatg	acactctcaa	aaagatattt	180
ccacggctcg	atctcgacat	ggggctatat	ccggtatctc	aaaaggaata	ttttacaggg	240
aattatgctt	tggttggttt	tatgcctggt	ttgcagtcct	tccattctta	ttctttcgac	300
cgaatcgttt	cggacatgaa	ggagatgaat	gaccggacaa	agaatacgtg	gaacaacgat	360
tcgatatcca	cacgccttga	cagcatcggt	ccggtaaact	cctccccgaa	ttaccggata	420
aacaattatc	tcacaatccg	gagagattcc	atactattga	aaggatgtca	gtctttatat	480
gtatcgaaat	tcggatacat	cacactgatg	ctttatcaaa	agggaaatga	cgctctcccg	540
atagactcac	ttcttggcaa	gtttaacgat	tcgggctgct	taaaagtgga	ccaagagtac	600
agatataccc	ctccgcaaaa	agaggggctt	tcattcacgc	attttttata	tgcttgggt	660
ataggtggaa	ttgtctatct	gctcatcgcg	tttttcccaa	aacgtaaaac	aaaccggcaa	720
tga						723

<210> 3232

<211> 1356

<212> DNA

<213> B.fragilis

<400> 3232

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gctacacttg	aattatccca	atcaactttt	gaaaacatca	gcagtgcagg	ggctacttta	180
accgtaaaca	ttacctgtag	tgactcctgg	acagcagcaa	gttcttctac	agcatgtaat	240
ctcgttccta	atcaaggaac	gagcaatcaa	tcactcagca	ttgttgtgga	agctaacctg	300
gatgaagccg	aaagaaatat	gacagttgtc	gttacttccg	gcggaatcaa	gaaaaccatc	360
agcattagcc	agcaaggaag	aagtacaaca	gcaggtgagt	atcactataa	ccttccgggt	420
attttccatg	tactatataa	agataaaaac	aatcctttac	aatacgttaa	acaagaccgt	480

ttagccaaaa	tactagatac	agtcaacaag	ctttataaag	ataaaaccaa	aagtgtggat	540
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ggagtgaat	atgttttatg	ggaggaaagt	taccctatcg	actgtgatgt	cttcatgaat	660
gacgaaacag	gtaaataatgt	aaaatacatc	tgggaaccga	ataactatat	caacgtaatg	720
gtatacaact	tcaaggacga	tgagagtacg	aacagtacca	cactgggaat	tgcacatata	780
cctttttcca	cagtaggaag	caattatctg	gaaggactga	gcaaaacaca	aaaatcttat	840
ttagagaaac	aaaatctgaa	atttccatat	agtgtctcca	tcaacagttt	attcattaat	900
gaccagtcaa	cttcaaccca	atatagtaca	gcagacatca	cggtaacatt	agctcacgaa	960
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ggtttgctttg	attcggatta	ttgtgacgac	accctacttt	ataataaagt	ggagtatgac	1080
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gtaagttact	cagaccggtt	taccaacgac	caacgttccc	gtatccgtca	cgtcctgaca	1260
tacagtccgc	tgatacccg	tcccaaacaa	ggacaaacac	aaacgcgttc	cgttgtcgaa	1320
ggaccgattg	atttaccat	acgcacagoc	cggtaa			1356

<210> 3233

<211> 1020

<212> DNA

<213> B.fragilis

<400> 3233

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gctaccgagg	cttatatcgg	atTTTTggcc	gatgatgaac	ttcaaggacg	tgaagccgga	180
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cgtccggttag	gcgagagcta	ttatcagccg	tttgatgctt	accggaaaga	acgccagcag	300
aaaggacgac	tggaagtgca	ccttgactcc	attgccaac	tgaacaagt	ggtgcatcag	360
aagttgtcta	tgaacaacgt	attgggtatg	attcccgga	agaagacgaa	tgaatacgtg	420
atagtaggtg	cacatttcga	ccatctgggc	attgatcccg	ctttggatgg	cgaccaaate	480
tacaatgggtg	ccgatgataa	tgcttccgga	gtatcggcgg	tggtgcaaat	agccaaggcc	540
tttgtggtaa	gcggacagca	accggaacgg	aatgtaattt	ttgctttttg	ggacggagag	600
gagaaagggc	ttctcggatc	gaaatacttt	gtgcaggagt	gtccggttc	taatacaggtc	660
aaaggatatt	tgaactttga	tatgattggc	cgcaacaate	agccgcaaaa	tcccaagcat	720
gtggtttatt	tctatacaga	agccaatccg	gctttcgggc	gttggtgaa	agaagacatt	780
aaaaagtacg	gcttgacgtt	agaacccaat	taccgccctt	gggacaagcc	ggtgggcgta	840
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catcccgatt	accatcagcc	ttctgacct	gcagaccgtc	tgaattggga	taaaagtggtt	960
gaaatatcta	aggcctcttt	ccttaacgtc	tggaatctgg	ctaacgaaaa	ggattattaa	1020

<210> 3234

<211> 720

<212> DNA

<213> B.fragilis

<400> 3234

gaaacaataa	tggcaaatgc	tataaccgcg	cacataccca	atacagtaac	ctgcctgaac	60
cttttttcag	gctgcattgc	cggcgtgatg	gcttttgaag	ctaagtatga	actagctttt	120
atcttcatta	tattaagtgc	tgtcttcgac	tttttcgacg	gcatgctggc	acgactgctt	180
catgcatatt	ctccgatagg	aaaagaactc	gactcactgg	cggatgacgt	cagtttttga	240
gtagccctct	ctttacttgt	tttttcattt	ttgaaagaac	ccggattgat	ataccccgac	300
tttctggcag	gattaagaga	ttatatccct	tatctggcat	tccttatctc	tattttttct	360
gctttacggt	tggctaattt	taacgtagac	gagcggcaaa	ccagttcttt	cataggcctt	420
ccggtaccgg	ccaatgccct	ctattgggga	gcgttaatcg	taggtggcaa	agattttctg	480
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gtggctgaaa	ttcccatggt	ctctctgaaa	ttcaaaaaatc	tttcttgga	agataataag	600
gtaagtttca	tattttctgat	tgtctgcatt	ccattactac	tgtttctggg	tatcagcgga	660
ttctcagcag	ttattgtgtg	gtatatcatt	ctttcacttt	taacaagaaa	aaataaataa	720

<210> 3235
 <211> 696
 <212> DNA
 <213> B.fragilis

<400> 3235
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 catatTTTTat ggggtagttt ttttctgcta ctgatacataa atctggctct ttactgggga 120
 attgattgta aaataaccatt ctatctgggtg gctttggtaa gtatcgtcgt ctatctgttg 180
 atggttaact ttttccgttg tcccatccgg cttttcggac aggatacaga aaagattgta 240
 gttgcaccgg cagacggaaa aatcgtagtc atcgaagaag tagatgaaca tgaatacttc 300
 cagcatcgcc gcattatggt atctatTTTT atgagcatac taaatgtaca cgccaactgg 360
 tatccggtag acggagtggg caagaaagtc actcatgata atggtaaatt catgaaagca 420
 tggcttccga aagccagtac agaaaatgaa cgttcaatga tcgtcatcga aactcctgag 480
 ggagtagagg taatggcacg gcaaatagcc ggtgcaatgg caagacgtat tgtaacatat 540
 gccgaaccgg gagaagaatg ttatatcgac gagcatttgg gattcataaa attcggttca 600
 cgtgtagatg tatactctccc gttaggcaca gaaatctgtg tcagcatggg acaattgacc 660
 accggttaacc aaactgttat cgccaaatta aaataa 696

<210> 3236
 <211> 1512
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (1420)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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 gacggagata cactgatgcg ccatcggccg acgttggaaga gtgattatac ttgtgcctac 180
 ctcaggttta atgtgccggc gggagagaaa ttaaccgtcc gtaccgcctc ctctgtcata 240
 agtcctgcac aggcgcttgt caatttcagt cgcgaagtgg gaggcaagag ccttgcccag 300
 gtgagagaag aagcccgaaa acaatggaac agttatctgg gacgaattga agcggaggga 360
 ggcagcagagg agcaattgcg taccttttac tcttgccctc accggaccct gctcttcccc 420
 cgcgaatttt atgagttcga cgctcagggg aaacctgtct attacagtcc ttacaatggg 480
 aagatacagg atggctatat gtataccgac aatggattct gggatacgtt ccgtgccgtc 540
 catcccttgt ttaccttatt atatccgga gtttccgagc gggttaccca atccatctc 600
 aatgcttacg atgaaagtgg gttcatgccc gagtgggcga gtccaggcca ccgggaatgt 660
 atgattggta ataattccat ctcttgttg acagacgcat ggatgaaagg cattcgtacc 720
 atctgtccgg agaaggctct tgaagcaatg attcatcaga ccgagggccg gcatcccga 780
 atcagttcgg tggaaactga cggattcggg tattatgacc gtttaagcta tgttccctat 840
 cccgaagtgc acgaggccac ggccaagacc cttgaatatg cttacgccga ctggtgtgtc 900
 gcacgttttg ccgactccat tggccggaaa gagattgccg atacctatta ccggaagacc 960
 ctcaactacc ggaaccttta ctatccgac tatggattca tgtgggcaaa agatgccaat 1020
 gggaaatgga gagacgcttt tgacgcgacg gaatggggag gccctttcac ggagggcagt 1080
 tcctggcact ggacgtggag tgttctgcat gatcccgaag gcttgtctcg attgatggga 1140
 ggacatacag cgatggaagc ccgtctcgac tctatgttta cagctcccaa tacctataat 1200
 tacggtactt acggttttgt tatccacgag atagccgaga tgggtggctct tgatatgggg 1260
 caatatgcac atggcaacca acctgtgcaa catgccatct atctatacga ctatatcggc 1320
 cggccctgga agaccagaa gcacgtccgc gaagtgtggg ataagcttta tcaactccgc 1380
 agcaaaggct actgcggtga cgaagataat gggcagactn ccgctgggtat gtcttttccg 1440
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 tcccgaact ga 1512

<210> 3237
 <211> 912

<212> DNA

<213> B.fragilis

<400> 3237

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aaaacccgga tcgctttccg taaggtgggg caggaacgta ctgtcgattt ggtgttgaca    60
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cttgcccgcc tgacagcccg tttgatagat gccgacttca gccgtgtaca gtttacaccc    180
gacctgatgc cgagtgcagt cctgggtacg actgttttca atatgaaaac caatgaattt    240
gatttccatc ggggacctgt ctttgccaat atcatattgg tagacgaaat taaccgtgca    300
cccgccaaaa cgcagtcgcg tcttttcgaa gtcattggaag aacgtcaggc cagtatcgac    360
ggaacaactt accggatggg agaactatat accattctgg caaccagaa tccgggtggag    420
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gaggatatta agttttagtc acctatgtg ttgcagcatc gcctgattct gactgcggaa    840
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gtacccaat aa                                     912

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<210> 3238

<211> 1020

<212> DNA

<213> B.fragilis

<400> 3238

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gagcaggcag ataaactgac tcctgaccgt cttgccgacg cttatacgga acttacggca    180
gatctcgcg ttcacaaaac tcattatccg tcttcccgca ttactattta tctgaataat    240
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gcgcgtggtg agccgatggc tgtgtacaac ggttcggaag aggtacctat gtttctgggc    540
attactttaa ataatatcat ggtttctttc aatgtctttg caatgggggt gctcaccagc    600
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ttctttaaac atggtttgtt gggcgaatcc atgcttgcca tctggttgca tgggactttg    720
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attatagtag gtacagttcc tatctttata atggccggat ttatcgaagg ttttatcacg    900
cgtcataccg aattaccga tgttttgccg ttgggcacat ttctattgtc actgtcattt    960
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<210> 3239

<211> 2679

<212> DNA

<213> B.fragilis

<400> 3239

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<210> 3240

<211> 1425

<212> DNA

<213> B.fragilis

<400> 3240

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<210> 3241

<211> 642

<212> DNA

<213> B.fragilis

<400> 3241

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<210> 3242

<211> 297

<212> DNA

<213> B.fragilis

<400> 3242

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<211> 1575

<212> DNA

<213> B.fragilis

<400> 3243

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<210> 3244

<211> 357

<212> DNA

<213> B.fragilis

<400> 3244

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<210> 3245

<211> 1794

<212> DNA

<213> B.fragilis

<400> 3245

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<210> 3246

<211> 972

<212> DNA

<213> B.fragilis

<400> 3246

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<211> 1899

<212> DNA

<213> B.fragilis

<400> 3247

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<211> 855

<212> DNA

<213> B.fragilis

<400> 3248

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acgcaattga	aaaaagactt	tcagggactg	gaagaagacc	tgcaaaaagat	acaggatgtg	600
attgacagtg	gcgtttctct	tcctaagaaa	aaagaaccct	ggctggcgtt	cggtatcgcc	660
atctgtacga	ttctggctaa	tgaagtggag	ggtatggaat	ggatgacgct	ggttgacggg	720
aaccgtgaag	tgccgggtgt	gcggtatgaa	ggttcggaac	agttgattga	tccgatgaaa	780
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<210> 3249

<211> 390

<212> DNA

<213> B.fragilis

<400> 3249

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aaagatggta	atatcgatac	tccactggac	acttatttca	gttttcagat	ggatatcatc	180
cacttgagga	agttgggtaa	tagtgagttc	tatggaaaat	atgtctacga	gaacgactcc	240
atgcacatac	aagtactcga	cgctacggcg	gaacagatga	aagttttcgg	catggatggc	300
cggttacagg	actttgccgt	agagaagctg	aacagtaaca	aattggttct	tcagtcggac	360
tatgcccggt	tggaattcag	aaaatattga				390

<210> 3250

<211> 1749

<212> DNA

<213> B.fragilis

<400> 3250

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ggcgtgtcct	tctttttcct	cctcttcctg	cttctcttcg	cctcgtgcga	tgacctggaa	180
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gataccgcca	atgacatggg	catttatgga	agcaaactct	atatcgtggg	caatgtatcg	420

agccagatag	aagtgggtcga	cctgcaaagc	ggcaagtctg	tcaagcagat	acccatgctg	480
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gtgtgttcct	tcgacggaac	agtggcgcg	atagatactg	cctctctttc	catcgacgca	600
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ggaatcggtc	ttgtatccaa	agacacgaat	ggcaacggat	tgccggatga	tgagtggtag	1620
gaattggcag	gaagcgaata	taactcgcct	gccaccatcc	gcaactacga	aatcatttac	1680
taccgtccc	cttcggcaga	cggggatgtg	aaatggaaa	acaatcaagg	caaagaggga	1740
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<210> 3251

<211> 1241

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (13), (14)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3251

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actatgcgga	tgtgctgacg	aactaccaga	caacgcgtgc	gaatgcccg	atcgtgttac	180
ccggtgcccga	gtttaccgac	acttcggaat	tttatctggc	caatgtatct	ttctcggata	240
cctctgctca	accttatgta	ctgttgacgc	gtattatcag	tatgctgaat	ttgcgaagag	300
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caatgaactt	ggggccggtt	ggtaatcttg	tctatgacgt	tgttggcgga	ctcgatgccg	480
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gtatcttggg	aggaattacc	gtgctcggtc	ctgtgttgaa	tggaaccgtt	agattattga	1140
tgggcaatat	aacggttacc	gttccggtga	atcttctttt	gcttggaaac	gataaacctga	1200
cgtgtccgg	tagctggagt	acaccaccgg	tacaatatta	a		1241

<210> 3252

<211> 2109

<212> DNA

<213> B.fragilis

<400> 3252

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tgttgctgcc	aggctcttac	cgtttcgctt	tccgcccgac	agcagaaagc	agataccgcc	180
cgtacttatt	caatccccga	agtaaccgtt	gccgaagcat	accacaccag	cgaagtgaga	240
gccatggctc	ccactcaggt	gttctctaaa	gaagaactca	aaagcctcaa	cgtattgcaa	300
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agatactaa						2109

<210> 3253

<211> 1452

<212> DNA

<213> B.fragilis

<400> 3253

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ataacagtag	atgtttttcg	atattacggg	ggtttctatg	tgattaacga	aggatgggca	480
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tccggaacac	aaaagcaaat	aattgactat	acaggtaaat	attggttccc	ttcaagcata	1440
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<210> 3254

<211> 720

<212> DNA

<213> B.fragilis

<400> 3254

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gatactgcc	actctgcgga	agaggccctg	aaaatgaata	tcagcagcta	tcacctgctg	180
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gtctatgtac	tggaccgcac	catagacgtc	aacatcaccc	ggttacggaa	aaagatcggg	660
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<210> 3255

<211> 1203

<212> DNA

<213> B.fragilis

<400> 3255

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tga

1203

<210> 3256

<211> 810

<212> DNA

<213> B.fragilis

<400> 3256

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tcttcgcattg	ccccctctgcc	gtttccgact	cattggacga	tggaatggga	tcgtatggac	180
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<210> 3257

<211> 1419

<212> DNA

<213> B.fragilis

<400> 3257

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ggaaaagtat	tagagctttt	tgacaaacta	caatatcaga	tcgccattca	tggtgatctg	180
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cgcgactcgg	attcaccaac	tgcatagagg	cgctatccgt	ttgccgatgt	atggatacaa	300
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cattcacgga	ctagtgtctg	gcgtaaaggt	ttcgggacgt	tactcgataa	attatacggg	420
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<210> 3258

<211> 1230

<212> DNA

<213> B.fragilis

<400> 3258

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<210> 3259

<211> 903

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3259

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ccc 903

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<210> 3260

<211> 765
 <212> DNA
 <213> B.fragilis

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 acagtggatg caggaacagc cgccgctgcc ggagtttctt ttaccggtgt taccagcgg 660
 atgactactg cccaagagtt tcaggcctat ccctacgaca gaatcatcag tactcttggc 720
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<210> 3261
 <211> 435
 <212> DNA
 <213> B.fragilis

<400> 3261
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 ggattgggaa ctttctaccc ggccttaagc agcgagggct gcgaaactcc cgaagaatgt 300
 acgccaaca aagtcagatt gacacgcatt tgcttccggg ccgatactgc gttcacctac 360
 gacgtgaaac attgcgaatt cgaaagcatg caactgcgat ttacaaagag gccgaagccc 420
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<210> 3262
 <211> 423
 <212> DNA
 <213> B.fragilis

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 aagggtttca cgatgaacgt caaaaagacc cgcttcttgt ctgaacataa acgtaagatt 180
 attacgggag tatcggtttag ctacaggcaag aagatgactc tgcctaaagt gaagaagcgg 240
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 attggttcta ccgatcccgt ttacttgaag cgtttactgg gcagtttgtg ttactggcgt 360
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<210> 3263
 <211> 564
 <212> DNA
 <213> B.fragilis

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agtatgacag	ggcgtgtgga	gcgttttctg	gggaaagggtg	gcattctatat	tatccgtaag	480
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<210> 3264

<211> 1293

<212> DNA

<213> B.fragilis

<400> 3264

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gaaagaggcc	tccattttga	aggtggggcaa	atcggagcca	ttttcgcaac	aatgggaatc	180
gcatccatta	tcatgccggg	aataacaggc	attatagccg	acaaatggtt	caatgccgaa	240
cgcctttatg	gtatttgcca	cttgctggga	gccggctgct	tgttctacgc	ttctaccgcc	300
accgactata	atcaaagtga	ttggggccatg	ttactcaatc	taatggttta	catgcctact	360
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ggatgatcat	ttttggggag	tttcgccaaa	ataccggaat	ttgcagactc	tttcggtgtc	780
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<210> 3265

<211> 720

<212> DNA

<213> B.fragilis

<400> 3265

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<210> 3266

<211> 756

<212> DNA

<213> B.fragilis

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 gccattggcag ccgattatgt agacatcctg cagatacccg ctttccctctg ccggcaaacg 300
 gacttactgg tcgctgctgc tcaaaccgga aaaacgatta atatcaaaaa aggacagttc 360
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 gttatgctga ctgaacgtgg aacaactttc ggttatcagg acctgggtcat cgactaccgg 480
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 gccaaagccg gcattgccgt aggagccgac ggtctcttta ttgagacaca cgaaaatccg 660
 gcagtagcca aaagcgacgg tgccaatatg ttgaaacttg accgggttga aggcttattg 720
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<210> 3267

<211> 987

<212> DNA

<213> B.fragilis

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<210> 3268

<211> 2832

<212> DNA

<213> B.fragilis

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<210> 3269

<211> 276

<212> DNA

<213> B.fragilis

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<210> 3270

<211> 1113

<212> DNA

<213> B.fragilis

<400> 3270

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cagatgctcc cggcattggg cgaagggtat gcccgtagcg cctatccgggt catttcatat 180
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<210> 3271

<211> 1023

<212> DNA

<213> B.fragilis

<400> 3271

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<210> 3272

<211> 267

<212> DNA

<213> B.fragilis

<400> 3272

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atacgaaaaa tgaatttcga tcttccatct tccactcttc gttttagtag agaacgtaaa 180
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<210> 3273

<211> 588

<212> DNA

<213> B.fragilis

<400> 3273

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gagccggtca	gcattatttc	tcttgaagaa	gcattgaata	aagccattca	agaagagaat	540
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<210> 3274

<211> 1197

<212> DNA

<213> B.fragilis

<400> 3274

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<210> 3275

<211> 2292

<212> DNA

<213> B.fragilis

<400> 3275

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<211> 1524

<212> DNA

<213> B.fragilis

<400> 3276

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cttccggata	gagacacaaa	tatcaatgga	agatatacga	cttacgagtt	aactacgaat	180
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gataaagaat	tccggagaata	cgaagccagt	ttcctcgcac	agttgaatag	tccggatgga	300
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tctattcaca	ccgctgaatt	gatcttatac	tataaaagtt	attttggaga	ctctatcaat	420
ccatgccgaa	tgaactgttta	tgaactggac	gaaaacttga	cccagaacta	ttatacagac	480
atcgatccat	tgaagtatta	caatccaaac	aacttactcg	cacgaaaagc	ctacacagct	540
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ctggaatatt	ttaaaacttc	ggaagcattt	attaataacg	tattcaaagg	tatttatgcc	720
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gctattattt	ccaataaacc	tacaaccaat	cagtatgtgt	ttaccaactt	gactcgcttg	1260
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gtacagtacg	atagctcttc	caataagaat	atgatcagca	tccagcacga	tctacaaccg	1440
ggatacgtaa	aactggaagg	tggctccggac	ggtacgaaac	tgaagttaga	agtaacttat	1500
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<210> 3277

<211> 918

<212> DNA
<213> B.fragilis

<400> 3277

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gaaagagcac	aaatgcaatt	gcgtaaatca	cggttgaaat	tctcacggtt	gaatcatatc	180
tttatctcgc	atctgcatgg	tgaccattgc	ttcggattga	tgggacttat	ttccactttc	240
gggttactgg	gacgtacagc	tgaattacac	attcattctc	caaaaggatt	ggaggagtgt	300
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ttcgatacca	gacagacttc	agtggttttac	gaagatcggt	cgatgacggg	cactactatt	420
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catattatac	gtgatattgg	cgattttttat	aagggtgcctg	tttacgaact	aaaccggata	540
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cggccttcgg	atcctcccag	aaagtatgcc	tattgttcgc	atacgatttt	tagggccgaa	660
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gagttggcac	gtgccaaaga	aacctatcat	actacagctg	ctcaggcggc	acggatagct	780
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<210> 3278

<211> 480

<212> DNA

<213> B.fragilis

<400> 3278

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gcattttata	cagaaaaagc	tggcctgact	caagaagagg	ctgcgaagtt	ttttccgggt	180
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ctttcgtgca	agaaaattta	tctggtgcaa	agagccgaga	tgcgtttcca	ccgcgaactg	420
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<210> 3279

<211> 699

<212> DNA

<213> B.fragilis

<400> 3279

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gccagcggtg	ttatctatgg	actggctttc	tttctttttc	tcagcggact	gttacgaaaa	420
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ttcgcaaatg	aacaagaaga	ggaatccgtc	tcagcaacag	atgaaacaga	taatatcgaa	660
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<210> 3280

<211> 791

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3280

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aagaaaagggg	aagaanggaa	aaaaaggaga	agnggggaaga	aggaanaaag	ggagagaagg	420
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aaaaggagag	gaaaggaagg	aagggaaggga	anagaaaggg	aagaaggaga	aaaggagggg	540
aannggaaag	aaaggaanga	aaaggaagag	aaaagggaag	gggnnaaaaa	aaggagaaga	600
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gaggggnngag	aaggaagaga	gaaagagaag	gggggggagg	ngnaggngga	aggggnnggg	720
gaggggnngnn	gngngggggg	nnnnngnngn	nnaagnngng	nnngnnnnnn	nnnnnnnnnn	780
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<210> 3281

<211> 1221

<212> DNA

<213> B.fragilis

<400> 3281

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gtactgttac	tatccgtcgg	cattgtttcg	tgggcacgca	cctcttatct	tacgacactg	1080
aacctgttgt	ttccacaaat	gtctgtcggg	tctctctggc	caactttcgc	cataggtata	1140
tttttattct	tattggtgtc	ttccatcaac	gttattatac	tgaaaaagaa	gatgttgtca	1200
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<210> 3282

<211> 1170

<212> DNA

<213> B.fragilis

<400> 3282

acaataactg	aatgaaaca	aacaaaaacg	atttttagcag	tcattctgtt	ggtggtatta	60
gtgggggtgtg	gagaaaaatat	acagtcaaac	aatgatttaa	tcattgttga	cgtttcgaaa	120
agttatccta	aaaaagaatt	gattcttcag	gactttatgg	atgtagaata	tgttgcgttg	180
gagaccactg	acgagtttct	tacacaaggt	ctggtgcagg	atgtgggaaa	agaatacata	240
ttggcaacaa	ataggaataa	tgatggggat	atttttat	ttgacagaaa	aaccggtaag	300
ggagtgagga	agataaatcg	tcgggggcaa	ggagcagaag	aatatgagag	gattaatgag	360
attattcttg	atgaaaacaa	tggtgaaata	ttcgtaaagt	caccgggaaa	taaaatctta	420
gtgtatgata	tttatggaaa	gttcaaacgg	tggttgagtc	ttgatcggga	agtttcatct	480
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ggagaggata	gaaccaaata	ataccatatt	atcctatcaa	aacaggatgg	aagtatcacc	600
cgtgatattt	ttattccttt	caaaacgatt	gatacaccaa	ttgtgaatga	tggagatagg	660
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acatcggctg	atacattgta	taactatgcg	tcggatggta	cattaagtcc	ttttgttgta	780
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caactgaaag	atggttaaatt	gaaagaaata	gcctctaggt	tgaatgaaga	agataatccg	1140
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<210> 3283

<211> 531

<212> DNA

<213> B.fragilis

<400> 3283

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atcggcctga	gtggctgccg	cacctctgct	cccaaactag	actataagaa	attggcccgt	120
gcttctgtac	gcttggggcgt	agacatcggg	atggaggata	accataaaact	ctacctggaa	180
gcagccgaat	ggataggtac	cccctaccgg	ggaggcggag	agaccaaacg	tggcacagac	240
tgctcgggaa	tgacctgcc	gatttataaa	aaggtatata	atatcaaaact	gcaacgaagc	300
acagacggtc	agaagaaaga	gagcagtaaa	gttgcccggc	gaaatcttcg	ggaaggtgat	360
ctggatattt	tcagtagccg	gaaatcgcg	agaaaagtgg	cacacgtggg	catctatctc	420
aaagacggaa	agtttggtca	tgccagcacc	agccaggagg	tcattgtcag	cagtctcaat	480
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<210> 3284

<211> 1401

<212> DNA

<213> B.fragilis

<400> 3284

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gagacaggta	ttaatgaggt	tgccgaacgt	tcttatattc	cggctctcaa	tacattgatt	180
gaaatgggtga	agaattccgg	aggagcattt	aaagtagccc	tttctatttc	gggagtagca	240
ttggaacagc	tcgaaattca	tgcacctgcc	gtaattgacc	tgttacatat	attaaacgat	300
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gaagactgtt	tccgtgaaga	ggtaatgcgt	cagagcgaaa	agatgaaaca	gatgtttggg	420
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gtggctagca	tgggtttcaa	aggcatgctg	accgaagggt	ctaaacacgt	tttgggttgg	540
aagagtcggc	attacgtgta	tcatttgcaat	caggctccaa	gtctgaaatt	gttattaaga	600
gacttcaagt	tatcggatga	tatcagtttg	cgctctctta	actctgattg	gagtgagtat	660
cctttatttg	ccgataagtt	tatcgggttg	attgatgctt	taccacaaga	agaacaagtg	720
atcaatatct	ttatggaact	gaaagcattg	ggatatggcg	agccattatc	atccaatatt	780

ttggagttct	tgaaggcact	tccttattgt	gcaaaagaaa	agggcattac	tttctctacc	840
ccatcggaga	ttatttcgaa	attgaaatct	gtttcccaat	tggatgtacc	atatccaatg	900
tcgtgggtag	acgaagaaaag	agatacagac	agctggctgg	gtaatgtttt	gcagcgtgaa	960
gctttcagca	aattatacag	tgtggctgaa	cgtgtacacc	tttgcgatga	tcgtcgtatc	1020
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ttacataagg	aggttgataa	gttgacggca	aaagcggaaa	aggctgcaa	aacagtaaag	1320
gccgaaccca	aagctgcacc	taaaaaggcc	gctgcgaaga	aacctgctgc	aaagaaagca	1380
acggcaaaaa	aagaagatta	a				1401

<210> 3285

<211> 186

<212> DNA

<213> B.fragilis

<400> 3285

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aaaagaggaa	aactctcctg	gctggccgat	ggaatgtaca	aaccgaaagc	tacagcgaa	120
atggcaaacg	aaagtgccat	ggtgtgtttg	tatccgatag	ctttgatagt	catcgaagcc	180
ggatag						186

<210> 3286

<211> 366

<212> DNA

<213> B.fragilis

<400> 3286

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attcagaatg	cagagaacgg	tgcaacagta	gaatttgaca	aagttccttt	ggtagacaaa	180
gacggaaaacg	ttactgtagg	tgtcctact	gtagacgggtg	caaaagtagt	ttgccagatt	240
gtttcaagcc	tggttaaagg	tgacaaagtt	cttggttttcc	acaagaaaag	aagaaaagggt	300
cacagaaaagt	tgaacgggtca	ccgtcagcag	ttcacagagt	taacaatcac	agaagtagta	360
gcttaa						366

<210> 3287

<211> 475

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (26), (149), (157), (163), (270), (274), (354), (376), (393), (406), (465)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3287

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agaaaaagag	aaaagggggga	gaaaaagana	aagaagnggg	ggnagaggga	aggggaaagg	180
gggaaagaag	aaggaggaaa	ggaaaagagga	aaagagaaga	aggaaaagga	agggaaggga	240
aaagaaaaa	agaggggaaaa	aaggggaaggn	aagnaaaaag	gagaaaaaaa	aaggaaagg	300
agagaggaaa	aaaagaaaaa	gggggaaaaa	aggaaaaaaa	aagaaagaag	aagnaaagg	360
aagaaaagg	aagaanggaa	aaaaaggaga	agnnggaaga	aggaanaaag	ggagagaagg	420
ggaggagag	ggaaagagag	gagggaagag	aaaaagggaag	aaggngggagg	gataa	475

<210> 3288

<211> 1800

<212> DNA

<213> B.fragilis

<400> 3288

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gaaaacggcg	agagcttcgc	tggtgccagc	cacgaagaac	tcgaaaaagc	ttacgacggg	120
acgcttaaca	aagtaaatga	ccgtgagggt	gttgacggaa	ctgtaatcgc	aatgaacaaa	180
cgtgaagttg	ttgtgaacat	cggttacaaa	tcagacggta	tcattccttt	gaatgaattc	240
cgctacaatc	ctgatttgaa	agtaggtgat	actggtgaag	tatacatcga	aaatcaggaa	300
gacaaaaaag	gacagttggg	tctgtcacac	agaaaagctc	gcgctactcg	ctcttgggat	360
cgcggttaatg	ctgctctgga	aaacgaagaa	attatcaagg	gttacatcaa	gtgtcgcact	420
aagggtggta	tgatcggtga	cgtattcggt	atcgaagcat	tcttgccggg	ttctcagatc	480
gacgtgaaac	cgatccgtga	ctatgatgta	ttcgttggca	aaacaatgga	attcaaagtg	540
gttaaaatca	accaggaatt	caaaaacgtg	gttggtttctc	acaaagctct	tatcgaagct	600
gaactggaac	aacagaagaa	agaaattatc	ggtaagctcg	aaaaaggaca	agttcttgaa	660
ggaaccgtta	agaatatcac	atcttatggg	gtattcatcg	acctgggtgg	cgtagacgga	720
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gctccgggtg	ttgaaggctc	gatccacggt	tcagaaatgt	catggtcaca	gcatttgcgt	1020
tctgcacaag	acttcatgaa	agtcggtgac	gaagtagaag	ctgtagttct	gactttggat	1080
cgcgagaac	gtaagatgtc	tttgggtatc	aaacaactga	aacaagatcc	atgggaaact	1140
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gcaaagaaat	cttctaagag	agaagaaact	cctgctatcc	agaaccaggc	tgttcttaca	1740
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<210> 3289

<211> 1941

<212> DNA

<213> B.fragilis

<400> 3289

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gataaaacaa	gggaagacgt	attgtttcta	aattctatca	atttcaacct	tccatgggca	180
aaggatgtgt	tctggtatac	gcaccaagcc	ctgcaaaaga	agaatatctc	cgtaaaggcc	240
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gcccgcgacc	gtctgccggc	tacactcgac	atcttgcttt	cacacgaaga	gctgaccgaa	480
tcgaataactg	tccccgctta	tgaatggcgg	aaaggatata	acgtgactac	tctggggcaa	540
gtatattatg	tgaaagaaac	catcggaactg	atgcccgcagc	tgatgccgga	tatgaagcgt	600
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gcaatgaccg	gatcttttcc	ggagttggcc	tttgaacagc	tgccaccag	gaatatttct	720
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catattctta	aaagagccca	tcagcgaatg	aaagaagcgc	agctgaaagc	cgaggaagcc	1260
aatcagctta	aatcggcctt	tctggctaata	atgagtcatg	agatacgtac	tcctctcaat	1320
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gatatgtcga	agatagaatc	cggaatgtat	gactttcatg	tgactcaggt	ggatgccaat	1500
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atacaaggca	ccggtattgg	actgtctatc	tgcaaaatga	ttattgagaa	gttggggggc	1860
gagatcgggg	ttcagtcgga	gtccggaaaa	ggttctgtct	tttggttcac	tcttccttac	1920
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<210> 3290

<211> 657

<212> DNA

<213> B.fragilis

<400> 3290

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tacctgatcg	aggctgcctc	cggtaccggg	aaatcatcgt	tgtgcagcta	catctacggc	180
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gcacgtatta	tgggagaact	ggtaatggaa	gaagccagca	aacaaggggc	gggaatcatc	600
gtaacgtcca	tcggcaagca	tatcgagtta	acgtatgaca	gaatattgaa	attatga	657

<210> 3291

<211> 2223

<212> DNA

<213> B.fragilis

<400> 3291

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attttggaata	atgtgatgac	tttcgctcct	ttttacgaaa	agttagttag	cgactatcgg	180
gccgatctat	atataaaagg	tacgatggac	atcaaacgaa	agaattttat	tctccggtat	240
gtaccttcca	tgttcgctct	tcaaaaagg	gtacggcagt	atatgggtgga	gacgtatagt	300
gatctgcatt	ttacagctcc	taatatctat	gaccaaagg	tgaaagcttc	tatgggcact	360
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cggggacatt	ttacttatga	agctcctttc	ctattattaa	aacatctgat	taaatacaca	2040
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tatgtggaat	tgggatatgg	aatcggtact	cacatctttg	attttggcgt	ttttgtaggt	2160
agtgagaact	ggaagtatac	cgaggtcggc	tgcaagttta	cgttcgagct	gtttaaccgc	2220
taa						2223

<210> 3292

<211> 963

<212> DNA

<213> B.fragilis

<400> 3292

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ggaatacagc	cgggtggaca	gttgactacc	actaccgatg	tagaaaactt	ccggggctat	180
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ggagtatttg	ctgcaggatg	cgtagctgat	cgcattatc	gtcaggctat	tacagcagcc	900
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<210> 3293

<211> 714

<212> DNA

<213> B.fragilis

<400> 3293

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gaattcggtta	cagtagccgc	cgatttctgc	gcttttttgg	aacgtgccga	aagtatgaaa	180
cgcagtacgt	ttgttgatac	cacccttaaa	atacttctt	tgctttatct	aaaagcatcc	240
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atttacgaag	tgtttcgcat	caacctggca	tcctatttgg	cagaaaaaga	cgattatctg	360
gaagtatttc	tatccgcacat	ggcttacagt	gacgaaccga	tcaaaaagaa	tatttcggaa	420
gatctggccg	atatctatca	ggatatcaaa	gactttatct	tcgtattcca	gctgggattg	480
aacgagacga	tgaacgattc	cctcgccatc	tgccaagaaa	acttcggact	cttgtgggga	540

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caaaaactgg taaacacccat gcggtgccctg catgacgtaa aatatagtcc gaaagcccgg 600
ggagaagacg aagaggaaga agagtacgaa cccgaaaaca atgaagactg tcactgtgaa 660
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<210> 3294

<211> 909

<212> DNA

<213> B.fragilis

<220>

<221> unsure

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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3294

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agaaaaagag aaaaggggga gaaaaagana aagaagnggg ggnagaggaa aggggaaagg 180
gggaaagaag aaggaggaaa ggaaagagga aaagagaaga aggaaaagga agggaaaggga 240
aaagaaaaga agagggaaaa aagggaaggn aagngaaaag gagaaaaaaa aaggaaaggg 300
agagaggaaa aaaagaaaaa gggggaaaaa aggaaaaaaa aagaagaag aagngaaagg 360
aagaaaaggg aagaanggaa aaaaaggaga agngggaaga aggaanaaag ggagagaagg 420
ggagggagag ggaagagag gagggaagag aaaaagggaag aaggnggagg gataaggaga 480
aaaaggagag gaaaggaagg aaggaaggga anagaaaggg aagaaggaga aaaggagggg 540
aannggaaag aaaggaanga aaaggaagag aaaaggaaag gggnnaaaaa aaggagaaga 600
aaggggaaag gggaggaaaa aaaagaggna gaaaaagggg ggggaaggga aaaagaaaaa 660
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gagggngngn gngngggggg nnnngngngn nnaagngng nngngnnnnn nnnannnnnn 780
nnnnnnnnntn ncnnnnnnnn nnnngnnnnn nnnccccc atgtcagcac tcctaaagtc 840
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<210> 3295

<211> 531

<212> DNA

<213> B.fragilis

<400> 3295

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tctaagaaga agagaggaga agaacgtatg aaagaagaag ataacatatt gaagaaagtg 180
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atccgtgtag cttcttcgaa ccaccaaccg acaactgccg gtgatcatct cactgcaaat 420
gaagcagcga cagaagtggg ttccgatgaa tatattgatg tagcattaga tcgctcgatg 480
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<210> 3296

<211> 225

<212> DNA

<213> B.fragilis

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 tttctttttt atagaccttt cattctctgt tttttccgat tttcttttcc catttttcctt 180
 ttctcatttc cttttattcc atgctttttc cactctgtca actaa 225

<210> 3297
 <211> 402
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222>
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 <223> Identity of nucleotide sequences at the above locations are unknown.

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 gaagaaaagg gaaaggggag gaaaaaaaag aggnagaaaa aggggggggaa ggggaaaaag 180
 aaaaagaggg nngagaagga agagagaaag agaagggggg ggaggnagnag gnggaagggg 240
 nnggggaggg nngnngnng gggggnnnnn gnnngnnaag nngnngnnng nnnnnnnnan 300
 nnnnnnnnnn nnntnnnnnn nnnannnnng nnnnnnnnca ccccatgtc agcactccta 360
 aagtctatgc ttcccgtaca gagagtacag agaaaacgat aa 402

<210> 3298
 <211> 1296
 <212> DNA
 <213> B.fragilis

<400> 3298
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 gatattgaga ttacattttt tattcccaag ccttgggggtg acgaagacca gagttttctg 180
 agaataatcg gtatgaacag tacaccgatt gtgtggaggg atgtagattg ggaatatgtc 240
 aaagggcgtg taggctctta catggatcct caattatatt ttgacttgcg cgaccatatt 300
 tatgctgatt tcaattatct gaatgcaaag gatctgggat gcattgaatt ttcagggcgt 360
 tatccggata acttacatga ggaaatcaat aactactcaa ttgttgagg agttatagca 420
 cggcaacagg agtttgaaat tatacactca catgactggg tgacttatcc ggccggtatt 480
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 gccgatcata ttatgtgtgt gagtgaatta actcgtaaaa cagtaatcca taaatatttc 660
 caggatccga agaaagtatc aactgtgcac aatgcagttt ctctcttttc gcaagagata 720
 caggatattg tacctaataa gaaccgaaa gaaaaggtag ttaccttctt gggacgtatt 780
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 cggaatgtac gttttgtgat ggccggtagt ggtgatatga tggatcagat gatccgtctg 900
 gcagctgaaa gaggcattgc cgatcgtttc cattttccgg gattcatgaa agggaaacaa 960
 gtatatgaag tcttgagggc cagtgatgta tacattatgc cttcggtatc cgaacctttt 1020
 ggtattttct cgttgagggc tatgcagtgt agcgtaccaa gcattatttc caaacaatcc 1080
 ggttgtgccc agatcttggg aaaatgtatc aagaccgatt actgggatat ccacgctatg 1140
 gcagatgcta tttattctat ctgtacctat ccggctatgt acgagtatct ccgtgatgaa 1200
 ggtaagaaaag aggtggacga aataaagtgg gagaacgtag gctacaaggt tcgcggcatc 1260

tacgacgagg ttataaaaaa ttatggaaaa caataa

1296

<210> 3299

<211> 2460

<212> DNA

<213> B.fragilis

<400> 3299

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<210> 3300

<211> 258

<212> DNA

<213> B.fragilis

<400> 3300

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aaatatgaat	ttattagtcg	cataatcgga	ttttttttat	atttgccttc	aataaggaga	180

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tcaaaagggg gtggctaa 258

<210> 3301

<211> 1950

<212> DNA

<213> B.fragilis

<400> 3301

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<210> 3302

<211> 2238

<212> DNA

<213> B.fragilis

<400> 3302

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aataaaactat	ccgattatta	tgccagccat	gtattcgatc	gtaagaagat	gcaagagtac	180
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gagaaagctt	ttgcttacga	agagaccgta	cgctccttacc	tggaagcat	acgcgaccat	2160
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<210> 3303

<211> 717

<212> DNA

<213> B.fragilis

<400> 3303

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gatatcgaga	attatacaat	caatcaggga	gagatggtcg	gcctgggtggg	taacaatgga	120
gccggaaaaa	caactttgtt	ccgttttaatg	ctggacctgc	tgaaagctga	taccggtgaa	180
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ggtaaaatgt	acggactcaa	aaaagaagaa	gtggatgaac	gcctgatccc	cttcgaacgt	360
tttatgaacg	gggaagtatt	gggacaaaag	aagtttatcc	gtaacttctc	ggcgggcaat	420
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gaaccgttta	atTTTTctgga	cccaagttca	caatccgtca	ttaaactatc	gctgaaaaag	540
tataatgagg	aacataatgc	cacggtcatt	atttcgagcc	ataacctgaa	ccatacgggtg	600
gatgtctgtc	ctcgatttgc	cgtgcttgag	catggagtca	ttatccgtga	ccttgtaaac	660
gaaaacaatt	cggcagaaaa	agaactggaa	gattatttta	atgtagaaga	agaatga	717

<210> 3304

<211> 1284

<212> DNA

<213> B.fragilis

<400> 3304

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gacaaaaagc	gtaatacaca	aaatcaatta	gataaaaacc	tgccagaggt	aaattcactt	180
tcgaaaacga	tcggtcagtt	gatgaaagaa	ggcaaaaagg	aagaagctga	agttgcaaaa	240
gcccgtgtag	ccgagataaa	ggagagcaat	aaaacactgc	aggccgacat	ggaccagggt	300

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cccacagatg	cactccccc	ttgggaactg	gctaagaaat	acgacttgat	tgactttgat	480
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<210> 3305

<211> 699

<212> DNA

<213> B.fragilis

<400> 3305

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gaggaagcac	agcactgtgt	acgtgtgctc	cgctgacag	ccggagatga	aattagtctc	120
accgacggaa	agggaaactt	ctatcgggca	gagatcagcg	tggcaacca	taaacgttgc	180
ctggtgaata	ttaaagaaac	aattttacca	gagcctttgt	gggacggaca	tctgcacatt	240
gctatggcac	ccacaaaaaa	tatggatcgt	aatgaatggg	ttgctgaaaa	agcaactgaa	300
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aagttcattg	cccactgtta	cgaaggagag	aaacctttac	tgaaagatgt	cttgacaaaa	540
ggagaagatg	ccctggtggt	gatcggaccg	gaaggtgact	tcagcgaaga	ggaagtcaag	600
aaagcaatcg	agaaaggatt	tgtccctatt	agtttaggca	aatcgcgact	gcgcacagaa	660
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<210> 3306

<211> 1491

<212> DNA

<213> B.fragilis

<400> 3306

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ccgatgtacg	aaaagaataa	aatcggcaaa	tacatcatgt	atgcgtcctt	tattttctgg	120
ggtgcttact	ttatatattt	tggcatcggg	ctggcaaaaag	ccatcagcac	agaagttccc	180
aatatggaag	cctatcatat	tttgaatagt	ggattgatat	ttgcgcttgc	cctggacttt	240
gtaatacgtt	tcccattcca	aaaaactcct	acacaagaag	taaaacctta	cctgctactt	300
ccggtaaaaac	gaagccgtat	actcgacttt	ctgcttctcc	gccacgggct	cagttctttc	360
aatcttatct	ggctgttcct	gttcgtgcgg	ttcgcagcac	tcacagtctt	tcctttttat	420
ggaatatcag	gagttctcac	ttacagcatc	ggcatttggg	tactgatggg	tttcaacgga	480
tattggtatc	tgctttgccg	tacgtgatt	aacgagcata	tttgggtggg	gttacttccc	540
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aactttttca	tgaacctggg	agaaggttat	atcgaaggaa	atctacttgc	ttacctaggt	660
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<210> 3307

<211> 795

<212> DNA

<213> B.fragilis

<400> 3307

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cccaacacta	ttgaagaaac	ttacgaactt	tgcgacgcat	taatgcggaa	cgacaaaaaa	180
gatattctgca	aagaactggg	agacgtcctg	ctgcacgtag	ctttttatgc	taaaatcggt	240
tccgaaaccg	gtgatttcga	catgaaagat	gtatgcgaca	aactttgtga	gaaattgata	300
ttccgtcatc	cccatgtatt	cggggaagta	aaagcagaaa	cagccggaca	agtatccgaa	360
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cgtaccaacc	aaaaattcat	ccgacgattt	aactatctgg	aagatcatac	cattaaagaa	720
ggtaaaaatc	taaaagatat	gagcctggat	gaaatggatg	ccatctggaa	cgaagctaaa	780
aagaaaggat	tatag					795

<210> 3308

<211> 651

<212> DNA

<213> B.fragilis

<400> 3308

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aaggcaggcg	gtatctgtgc	ggaattcaac	gtgacagtgt	ttaacaaaag	caggatggcc	180
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ggtattactt	ggtttgatgg	taagaccag	tggagctatc	tgagaagcag	tgatgaagtt	300
aatatcagta	accctaccgg	gaccgaattg	cagggcctta	atccgtatgc	gcttttacag	360
atataccgtc	atggcttcga	ctataagatc	ggatcattga	agaactttgg	tggcaaaccg	420
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tatgtgagta	aagacactta	tcaacccttg	ttcattatga	tggacaacac	tgataagagt	540
cgtagcgaga	tactgtgac	cggttatcag	acaggtttga	aatatgccga	tggtatgttt	600
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<210> 3309

<211> 2655

<212> DNA

<213> B.fragilis

<400> 3309

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cgtgaacctt	acaccatcgt	cattccgccc	cctaacgtca	ccggtgtgtt	gcacatggga	180
catatgctta	ataataccat	tcaggatatt	cttgcttcgtc	gtgcacgtat	ggaaggtgag	240

aatgcttgct	gggtgccggg	aaccgacccat	gcctctattg	ctaccgaagc	caaggtagtg	300
aataagttgg	cgcacacagg	tattaagaaa	accgatctga	gccgtgacga	gtttctgaag	360
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<210> 3310

<211> 954

<212> DNA

<213> B.fragilis

<400> 3310

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<210> 3311

<211> 1581

<212> DNA

<213> B.fragilis

<400> 3311

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attccggccg	atgcttcggc	tggtgcttcc	attaatctga	attctcttgc	tgacaaagcc	180
ggcttgaatg	ataaacagaa	tgaagggatg	aaacaaaaaa	tgatggaagc	cctgaaaagc	240
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<210> 3312

<211> 576

<212> DNA

<213> B.fragilis

<400> 3312

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<210> 3313

<211> 657

<212> DNA
<213> B.fragilis

<400> 3313

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tgggcctgcc	tcaacatata	tcacttattg	gaggaactga	aacgaacagg	aaactacgaa	600
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<210> 3314

<211> 864

<212> DNA

<213> B.fragilis

<400> 3314

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<210> 3315

<211> 2517

<212> DNA

<213> B.fragilis

<400> 3315

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<210> 3316

<211> 405

<212> DNA

<213> B.fragilis

<400> 3316

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cgcggtacag	gtaaaaatctg	cttgaatggc	gctgcggccc	gtaaagtaca	accggatgat	300
attgtgatca	ttatgtcgta	tgcggttgatg	gattttgagg	aagctaagtc	gtttaagccg	360
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<210> 3317

<211> 933

<212> DNA

<213> B.fragilis

<400> 3317

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<210> 3318

<211> 867

<212> DNA

<213> B.fragilis

<400> 3318

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aggagtataa	agaaacaaac	cgggcaaacg	tttcactatt	ggatggcgga	ttttatactg	720
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<210> 3319

<211> 972

<212> DNA

<213> B.fragilis

<400> 3319

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<210> 3320

<211> 810

<212> DNA

<213> B.fragilis

<400> 3320

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<210> 3321

<211> 498

<212> DNA

<213> B.fragilis

<400> 3321

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<210> 3322

<211> 876

<212> DNA

<213> B.fragilis

<400> 3322

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<210> 3323

<211> 1293

<212> DNA

<213> B.fragilis

<400> 3323

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gatgtagaag	tccgtatttc	gaatatgaat	gaattggatg	atatcatgga	gttgattcaa	1260
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<210> 3324

<211> 852

<212> DNA

<213> B.fragilis

<400> 3324

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<210> 3325

<211> 1017

<212> DNA

<213> B.fragilis

<400> 3325

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<210> 3326

<211> 1683

<212> DNA

<213> B.fragilis

<400> 3326

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<210> 3327

<211> 2907

<212> DNA

<213> B.fragilis

<400> 3327

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<210> 3328

<211> 531

<212> DNA

<213> B.fragilis

<400> 3328

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<210> 3329

<211> 189
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 <213> B.fragilis

<400> 3329
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<210> 3330
 <211> 1188
 <212> DNA
 <213> B.fragilis

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<210> 3331
 <211> 753
 <212> DNA
 <213> B.fragilis

<400> 3331
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<210> 3332
 <211> 951

<212> DNA

<213> B.fragilis

<400> 3332

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<210> 3333

<211> 1296

<212> DNA

<213> B.fragilis

<400> 3333

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<210> 3334

<211> 405

<212> DNA

<213> B.fragilis

<400> 3334

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<210> 3335

<211> 771

<212> DNA

<213> B.fragilis

<400> 3335

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gcatggacca	aagaagctca	ggagcgccgg	gccggtgaag	tgctgtttac	cagtatgaac	540
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tccatacccg	ttatcgcatc	gggcccggag	ggccggatgg	agcacttccg	cgatgctttt	660
acacttggt	aagcagatgc	cgcactggca	gccagtgttt	ttcacttcgg	agaaattaaa	720
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<210> 3336

<211> 561

<212> DNA

<213> B.fragilis

<400> 3336

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gcattttgctt	ttttatacaa	tctattactgg	aaacaagttt	ataatttcac	aaggctctat	120
ttcaccgcct	ctatggatat	tgaggaaatt	gtgcagggaag	tattttgtga	agtatgggaa	180
tctcatcatt	tcttggatga	aaacaaaagt	tttgaaggct	acctctttat	cataaccgca	240
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atacaagcag	tcgaagaatc	ttatgacatg	gagggagagt	tggtatgccg	cgattttaaag	360
aaatatatcg	atgaacttgt	tatgcaactc	ccccctcgcc	aacgagaagt	attccgcatg	420
agcaggggaac	tgacatgag	caacagagaa	atagcagaac	acttctctat	tactgaaaaa	480
gcaatagagc	gccatatcaa	tctggccctg	aaattcctca	aaaagaacct	caattttattc	540
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<210> 3337

<211> 252

<212> DNA

<213> B.fragilis

<400> 3337

gttcctgagc	aacaaaaagt	tgcccaggat	tttgccatgt	cagaattttc	acttatctta	60
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ctgagaaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 3338

<211> 585

<212> DNA

<213> B.fragilis

<400> 3338
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gtgattgaag acaaccagtc ggagttgtac gacttctttg ccgccatcaa ctccgtgctc 180
gaaagcggaa acgaatacta ttattttttcc cgtcgcgaga ataaagtcga cttggaacgt 240
aagttggaga ttgctgtccg ttggattgat gtactcgact ttatcaagac ttatgatgcg 300
gccttttcat ccggattccg ttttcagccg gccgatatgg ttgtgaaagt gggaaccgac 360
ttagagttga aagagaagct taccggcctg aaaaagctta ccggacggga aaagcatgaa 420
gagatgattg acaaaatagt aaacgacctg aaacgtgacg gctttattga actggaaaat 480
gagattactt ccacctataa ggtagtggcg gctttcggct atctggaaga gttggtcgct 540
tgcattaaca taccagaaga gatacagaat gagatacctg aataa 585

<210> 3339

<211> 618

<212> DNA

<213> B.fragilis

<400> 3339
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tatgccgatt gggagagtg c ttctgtagca gcatcccttc attccggtct gatgccgggc 120
agtgaatcca agtacatagt caaaacagta gccccactt tagatgcggt ctgctctttg 180
ggtggtttcc gtactctgcc ggactacagt ttcgacaacc ttccttccga ttataccgcc 240
ttggtcctaa ttggtggtat gcaatggcag tctgccgaag cagaacgtgt atttcccatc 300
gtgcaggatg ctttcgaaaa agggaaagtg attggcggca tctgtaacgc tgcttcattt 360
ttgtgcgccc atggttttct gaacaagggt aaacataccg gaaacaccct tgccgtgctc 420
aaacaatggg gcggggaacg atataccaac gaggatggtt acctggaaaa gcaagctgtc 480
ggcgataaga acatagttac ggcaaatggc accggttatc tggaattcac ccgtgagctg 540
ctattagcat tgaaagccga tacgcaggaa aagatagaag cattttatga tttcagtaaa 600
aatggacttg tgagatag 618

<210> 3340

<211> 3381

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (2997), (3209)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3340
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tataacgcta atgatttgaa aaacacaact cttaagagta tcgattgtaa aggttctatt 240
gatgacgtct tgaacgaagt ctttaaaggg agtaatatca gttatgttat taaagggaat 300
gaagttattc ttaaagttga gaaaacggaa agtacacaac agaaaaaggc aaaaatcatt 360
ggtatagtaa cagattcaaa aaccgggtgaa cctatcatcg gtgcaacagt gcaattactg 420
ggtactacca caggtgtgat taccgatgta gatggtaaat ttgaattagc ggcatttcct 480
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caaaaggtaa tgtctatcac tcttgccgaa gatgcccgac aactggatga ggtggtggtc 600
actgcttttg gtacgggaca gaaaaaggag actatcaccg gatcgattca gtcggttcgt 660
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ggtgtgattg cttaccaacg tagtggagaa cggggacaga attctgcgga ctttttcatt 780
cgtggtgatt caaccatgaa cggagcgact tctcctctaa ttattttgga tggagttgaa 840
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gtggattttc	atctctctaa	gtcttctacc	atttcgcttc	acctgaatgt	acagttgaat	1440
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aaactggatt	ttataacgaa	gggattaagc	ttcagagctt	tggtttcatt	taagaattgg	1740
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cagaatgaag	acgggttccta	tgactttacc	aatacaccta	tcggagaacc	gagtaatcat	1860
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gattataata	cgaatgtaaa	cagcagtcct	attgcttcgc	ttccaaaacg	taaaaatgggt	2040
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cggtatccgc	gattgacaca	atataataac	aacaacaata	cggcgtcttc	ttcttattgg	3180
gctgcgaatg	cttcgttctc	gaaattgcng	aatgccgaaa	atcgctatcg	tttcaaatgg	3240
gcaagaatct	atgtgaacgg	aagtaacttg	ttgacctttt	ctccatttaa	gctatgggat	3300
cctgaaatgg	gtggagggtgc	cggtatgaaa	taccgcacac	aacgtacata	taatgttggt	3360
attcaattaa	cttttaataa	a				3381

<210> 3341

<211> 309

<212> DNA

<213> B.fragilis

<400> 3341

cagagattaa	aattgagcaa	aaaccgtatt	gatcaggaaa	agagagtagt	agagttgatg	60
atccgccttt	actgcogtaa	aaaagaaaag	aatgtcacgc	tttgcccccg	gtgcgaagag	120
ttgttgcaact	atgcacacgc	ccgcctggac	cactgtccct	tcggggagaa	aaagaaagca	180
tgcaagcagt	gcagcataca	ctgctacaaa	cccgcacatg	gggaacagat	gagacgggtg	240
atgcgctttt	ccggtccccg	gatgctgatt	tacgtctcct	gggaggcaat	caagcatctg	300
ttgggatag						309

<210> 3342

<211> 270

<212> DNA

<213> B.fragilis

<400> 3342

cacaaaataa	atctaaatat	aattattaaa	atgaataaaa	gtaacaaaga	aactaatctg	60
atcaagaagc	tattggcaga	tcaattggac	aagaaggaac	gcaagaaact	ctattattca	120
aatttaatat	aaaaacaaat	gagaaaacaa	tggaagaaa	ataagaatac	tccggtagaa	180
aatgagattg	gaaataagat	atgggacaag	atcgagaacc	aatgcataaa	agttcacaaa	240
agaatagttc	ctttagaact	tatccaataa				270

<210> 3343

<211> 291

<212> DNA

<213> B.fragilis

<400> 3343

cctatttaaaa	acagaaaaag	aatggaacag	aaattttgcc	agagctgcgg	catgccgctc	60
aaccgcgaag	tattgggaac	agaaaaggat	ggtagcaaaa	acgaagagta	ttgcacctat	120
tgttatgccg	acggacattt	caccgtggaa	tgacgatgg	acgaaatgat	taaccaatgc	180
gcacagtctg	tagacgaatt	caataaaggc	tccgaagtga	aaatgacgaa	ggaagaggcc	240
attgcaaaaca	tgaagcaatt	cttcccaatg	ctgaaaaggt	ggaaacagtg	a	291

<210> 3344

<211> 864

<212> DNA

<213> B.fragilis

<400> 3344

aaatcaatga	agtcttcacg	aaacacttct	acctccggca	aaccgccttc	cggtcgtcgt	60
acaccggcac	ggaagacgaa	agcgaaaaag	aaaactacct	gcaccatgcc	cgtttggtatg	120
cgcaataccc	ttgcgcttat	tgtggtcgga	gtattttctc	tcactttcta	ttatttcggt	180
atccgtcctt	attcttatcg	ttggaaggag	tgctacggac	ggaaggagta	tggtgtttgt	240
atcccttgtg	gctatgaggt	gcatggcatc	gatatctccc	attatcaggg	gaacatcgac	300
tggaaggagt	tgaacaaaa	cagagaaacg	gattttccgc	ttacttttat	ttttatgaaa	360
gccaccgagg	gaggagatca	tggtgacgat	actttcaaag	acaacttcga	acaagcacgt	420
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caggcggact	tttttatccg	taccgtgaaa	ctcgatagtg	gagatttgcc	tccggtgctc	540
gatgtcgaac	tgacaggtaa	gaggcctaaa	aaagagttgc	aacaaaatat	taagaaatgg	600
ctcgaccggg	tgagggcaca	ttatggtgta	aaacctattc	tctacacttc	ttataaattc	660
aagaccgcgt	atctggacga	ctcgcttttc	aatgcttatt	cctactggat	agcccactat	720
tacgttgatt	cggtgaggta	cgaaggtaaa	tggcacttct	ggcagcacac	tgatatcgga	780
agtgtgcccg	gtattcatca	cgatgtagat	ctgaacgtat	tcaacggttc	gctcgaagag	840
ctgaggaaga	tgacgatgag	atga				864

<210> 3345

<211> 414

<212> DNA

<213> B.fragilis

<400> 3345

tatacaatga	aatcattaaa	cgaaagagca	gcagatttgc	tgcaagggtg	tgaaacggta	60
atactcagtt	cggatcaatca	agagggatat	ccccgtcctg	tccctttgag	taagattgct	120
tccgaaggta	tttctgagat	ttggtggcga	accgggggaa	attctgtgaa	aacgaaagat	180
ttccggagca	accgaaagc	gggtctttgt	ttctacgaac	aagggaatag	cgttgccttg	240
accggtgaaa	tagaggtagt	gacagatgcc	ggactcaaac	agaagtattg	gcaagactgg	300
tttatcgccc	atttcccaaa	gggaccgact	gatccggaat	acgttttact	gaagttccgt	360
tctgagcatg	ccacgttctg	gatcgacgga	caattcgtcc	atcggaacat	ttaa	414

<210> 3346

<211> 909

<212> DNA

<213> B.fragilis

<400> 3346

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atgatcggct	gctccagcga	tgagaagtat	cccatgccga	cctctataga	tcagaattca	120
ctgtcggctg	aagccaaagc	cggtgctatc	aaattgaaat	ggaccgtacc	agccgattct	180
aatattattt	atgtaaaagt	gacctataca	ttacctgaag	acgggaagaa	atgtatgaga	240
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attaacttta	cattgcaacc	ttgcaatcgt	gccggggaag	cttcgcaaag	ttgcagtatc	360
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tctgcaaaac	agttgtatag	agatgatcag	gagagttagt	aaggacctat	cgcaaacctg	480
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cgctatcttt	ggtttaaggt	gaaatcttct	acaagcggct	ccaactggat	tgcgttggca	840
gaactcggcc	tttcgaaggt	aattgtgaaa	acctatgata	cggaaaccgg	agaaactacc	900
attgagtaa						909

<210> 3347

<211> 1083

<212> DNA

<213> B.fragilis

<400> 3347

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atatgggcac	ggggagaaga	atattacgaa	tgtgatgctg	taaaagatct	ggaagaaaca	120
gaaccgggag	aatggatagc	cactgtagag	gggacggaag	attatgaagt	ggaaatctca	180
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aaacatgtgg	tagctacagt	attagccatc	cgcaacaatc	ggtcgggaca	aaaacgtttt	300
ttatccgccc	gggaagctaa	gttgatggaa	aaacaacaag	caactctaaa	ggataaaaag	360
gtagaagata	ttttggcctt	tgtaccttcc	gaccagctat	cggatttcgt	actggagtat	420
gcttccaaac	atacggaatg	taaacaggca	cttttgagg	aattccttcc	aaagcctcaa	480
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tatggtgaaa	ccaaaggcag	atatggggga	tattatgaac	cgacaatgga	ttggaataaa	600
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attgatctgt	tactgagtca	gataacgata	gcgacacaaa	cccaggaaga	ggctttaacg	960
tataataaac	aattgataga	ggaaaggaaa	tcaagctggg	agctttataa	gcttattgaa	1020
aagaaaatta	atatatcctt	aattccgcaa	cactataatt	taactttatt	tataagttcc	1080
tga						1083

<210> 3348

<211> 267

<212> DNA

<213> B.fragilis

<400> 3348

aaaatggaag	aatatgaagt	aattcacccg	cggagcggga	atcgttttga	attggagaag	60
aatggaatga	ctgcctttgt	ggaatatgaa	gtcgaagatg	gagcactgga	tattatgcac	120
actatcgtac	ctcctccctt	ggaaggaaag	ggaattgcgg	ccgcactggt	agaagcgact	180
tataaatatg	cctctgcgca	ggggttgaag	cccaaagcaa	cgtgttcgta	tgccgtcgca	240
tggctgaaac	ggcatccggc	ggaataa				267

<210> 3349

<211> 222

<212> DNA

<213> B.fragilis

<400> 3349

aaagtgagag	aaaataactcc	gaccacaata	agcgcaaggg	tattgcgcat	ccaaacgggc	60
atgggtgcggg	tagtttttctt	tttcgctttc	gtcttccgtg	ccgggtgtacg	acgaccggaa	120
gcgggtttgc	cggaggtaga	agtgtttcgt	gaagacttca	ttgattttta	ttcttattta	180
gagtttgatt	caccacagat	tacacggatt	ttcacagatt	aa		222

<210> 3350

<211> 705

<212> DNA

<213> B.fragilis

<400> 3350

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tgtgtgctga	gcgaagttaa	tttgcaactg	cacaaggggg	agttcgttta	tttgggtgggt	120
aaagtgggct	ccggcaagac	cagcctgctc	aaaaccctct	atggcgagct	cgatgtgact	180
gccggtgagg	ccgaagtgtc	cggttatcgg	atgacatcca	tcaagcgcaa	gcacattccg	240
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ccaaacgagc	tttcggggcg	tgagcagcag	cgcacgtga	tagcgcgtgc	catgctcaac	480
tctccggaga	ttatcctggc	ggacgaacct	accggaacc	tcgatgtaga	gaccggaaaa	540
gccattgtag	agttgttgca	taacatctgt	cagaccggat	cgctggtagt	gatgaccact	600
cacaacctcc	agttggtagc	cgaatatccc	ggacagggat	accggtgcgc	cgaacatcgc	660
attgtcaatg	tgacggacga	atttgtgaag	aaagaaaata	attaa		705

<210> 3351

<211> 210

<212> DNA

<213> B.fragilis

<400> 3351

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tcactcaact	cgttgatccc	tccccgaca	gtaaacggaa	tactgatatt	ggcagctatt	120
cgccgaacaa	gctcggcaaa	agttttgcga	ccttcgtggc	tggccgtaat	gtcgagaaaa	180
accaactcat	ctgccccctg	ctcgcataaa				210

<210> 3352

<211> 387

<212> DNA

<213> B.fragilis

<400> 3352

ctattttactt	gtactttttc	tttccgtttt	ggcacgatat	tggctatatg	cctttcgcaa	60
aaaaaatcgt	gtgttatgga	agaataacctg	tcggcgggaca	tatacgttag	taaacggaat	120
aacagtctga	taaacggcaa	aatgataggg	cgcgtacttg	ggatcttact	ctttatagag	180
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cgtgggtgcg	aaaatcgggt	gagccggcgt	gacggttact	gcattgagac	actctcgtgg	360
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<210> 3353

<211> 774

<212> DNA

<213> B.fragilis

<400> 3353

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ttcaccatac	ttctattttt	attctcgcgtg	gcagaagtat	atgcacaaac	ggaattcacg	120
acttgtctgt	ttgactcaag	ccggaaccgg	atagtgccgg	tagctattta	tcaaccgcga	180
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aaatttcgaa	tagaagttgt	gcgactggat	ggagttacac	acagtaacat	gggagaaaaac	720
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<210> 3354

<211> 186

<212> DNA

<213> B.fragilis

<400> 3354

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accaagaatg	acgatgataa	gataaaaaagc	aaaaaacata	cccacagtag	acacaatcga	180
aggtga						186

<210> 3355

<211> 198

<212> DNA

<213> B.fragilis

<400> 3355

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ggatgccgtt	tcagccatgc	gacggcatac	gaacacgttg	ctttgggctt	caacccttgc	180
gcagagggcat	atttataa					198

<210> 3356

<211> 825

<212> DNA

<213> B.fragilis

<400> 3356

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gatttgattt	tcgctttggg	cgggataaca	caaccctgag	gcaacgaagg	gcggatcatg	180
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tcgcacttct	tgaaagaggt	caagacgctg	tccggcggtga	cggcagaatc	attcctttct	780
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<210> 3357

<211> 735

<212> DNA

<213> B.fragilis

<400> 3357

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gttgccaaag	agtttgaggc	caacgggtatc	cggcgtttgc	acgtggtgga	tctggatgga	180
gccgcttcgc	atcatgtggt	caactaccgg	acactcgact	tgatagccag	tcgcacatcg	240
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<210> 3358

<211> 183

<212> DNA

<213> B.fragilis

<400> 3358

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atagacctga	gcaaagataa	gcgattctac	cgggaataacg	acctgctttt	ggttactatt	180
tga						183

<210> 3359

<211> 1920

<212> DNA

<213> B.fragilis

<400> 3359

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aaagaccgga	atgcggctaa	gaattttgtt	tattcttgc	atggctattt	gccgcaaagt	180
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catgaaacgt	ttgccagttt	tccaaaaggc	aactatacgg	cttcttcgcc	ggtgatttct	300
tattggaata	cattttttca	aggattgctg	cagtgcata	tatttctgga	aaatgtagac	360
aaggtaccgg	acctgactga	aagtgtaaaa	acagactata	tcgcacaggt	taagtttctg	420
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gcgatagtga	agactattga	ctttgagcgt	aagttcgagg	cgccgactca	atatctgttg	1860
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<210> 3360

<211> 1188

<212> DNA

<213> B.fragilis

<400> 3360

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ggagtcgtga	tttccaagtc	catagccatt	gacctttacc	agggaaaaga	actaacacgt	420
tttttcgcca	tgctgagttc	cgtacaggga	ttagctccc	tctgtgcccc	ggatttgggc	480
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ccgttgacgg	gaataggcaa	tatgctttac	tctaccggta	tcattatcgt	ggcttgctgt	1140
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<210> 3361

<211> 318

<212> DNA

<213> B.fragilis

<400> 3361

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gcatcccgaa	aacgatggcg	tactcccgaa	gtccacctgt	tgggaatagc	cgtagcggga	180
ggttcgtag	gtgcgtgggc	agggatgtat	acgtttcggc	ataagacacg	gcatcttaaa	240
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<210> 3362

<211> 246

<212> DNA

<213> B.fragilis

<400> 3362

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caaaaagagg	aaacacagg	aaatacgggt	gaaatatatt	ccatcacttt	actaaaagat	180
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 <211> 744
 <212> DNA
 <213> B.fragilis

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 aatcactatg aatatataga gcaggatttg aaagaaatga aaaagctgaa agatgggaag 660
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<210> 3364
 <211> 621
 <212> DNA
 <213> B.fragilis

<400> 3364
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 ggtacagatg accgtttgat atacgaaggt tccgacctga tttaccacct gattgtattg 540
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<210> 3365
 <211> 1224
 <212> DNA
 <213> B.fragilis

<400> 3365
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<210> 3366

<211> 207

<212> DNA

<213> B.fragilis

<400> 3366

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tacacgaagg	acttaagaat	attcttgttc	gtagacgata	ttgaccgata	ctctgaaaaa	180
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<210> 3367

<211> 600

<212> DNA

<213> B.fragilis

<400> 3367

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gctgccgata	aagtgatctt	tcccgggggtg	ggagaggccg	agactaccat	gcttcatctc	180
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<210> 3368

<211> 1173

<212> DNA

<213> B.fragilis

<400> 3368

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<210> 3369

<211> 1134

<212> DNA

<213> B.fragilis

<400> 3369

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<210> 3370

<211> 1341

<212> DNA

<213> B.fragilis

<400> 3370

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<210> 3371
 <211> 963
 <212> DNA
 <213> B.fragilis

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<210> 3372
 <211> 912
 <212> DNA
 <213> B.fragilis

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<210> 3373
 <211> 771
 <212> DNA
 <213> B.fragilis

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<210> 3374

<211> 960

<212> DNA

<213> B.fragilis

<400> 3374

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<210> 3375

<211> 1719

<212> DNA

<213> B.fragilis

<400> 3375

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<210> 3376

<211> 3729

<212> DNA

<213> B.fragilis

<400> 3376

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<210> 3377

<211> 207

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (178)

<223> Identity of nucleotide sequences at the above locations are unknown.

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<210> 3378

<211> 336

<212> DNA

<213> B.fragilis

<400> 3378

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aaatattacg	aagatataaa	gaaagtggag	gtgtcattaa	aggtagttaa	accagaagct	180
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aaaatatgcg	atacttttga	ggaagcagtc	gacttatgtg	tggaagcatt	ggaaaaacag	300
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<210> 3379

<211> 525

<212> DNA

<213> B.fragilis

<400> 3379

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agtgaattga	gaagagcttg	tttcaaggct	gacatcaa	tgatggtagt	caagaatata	180
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aaaggtacaa	cagctgtgat	gttttgcaat	gttgcaaacg	cacctgctaa	actgatcaag	300
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gttggtgctg	accagttgga	tgctctcgta	gctattaaga	gtaaaaatga	agttattgcc	420
gatatcggtg	ccctgttgca	atcaccggcc	aagaatgtta	tttctgctct	tcaatcaggt	480
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<210> 3380

<211> 591

<212> DNA

<213> B.fragilis

<400> 3380

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ggagaaaact	gttttctggc	cgataacgcc	accatcatcg	gcgatgtaaa	aatgggacag	180
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gaaataggca	actatgtatc	ggtagggcac	aatgtgacaa	tccatgggtc	aacagtaaag	360
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gcaatcggtg	ccgcaggctc	acttgtactg	agcaatacca	tcacgaacc	gggaagtatt	480
tggggaggtg	taccggccaa	gttcataaag	aaggtagatc	cggaacaagc	taaagaactg	540
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<210> 3381

<211> 1782

<212> DNA

<213> B.fragilis

<400> 3381

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<210> 3382
 <211> 1200
 <212> DNA
 <213> B.fragilis

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<210> 3383
 <211> 456
 <212> DNA
 <213> B.fragilis

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 gttgccgaga ttacttgga acaggttcgt acgattgctc aggacaaaat gggttgacttg 360
 aactgtttta ctgtggaagc tgccatgaga atggttgacg gtacagctag aagtatgggt 420
 atcgtgttaa aaggggagtt cccggttaat aattaa 456

<210> 3384
 <211> 288
 <212> DNA
 <213> B.fragilis

<400> 3384
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 acagtaccac gacctgtgat agagaacacg tcttctaccg gcatcaagaa aggtttatca 180
 acatcgcgcg gaggcagtgg aatccaagta tcaacagctt ccatcagttc cattactttg 240
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<210> 3385
 <211> 345
 <212> DNA
 <213> B.fragilis

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ttctgtttcc agaattttat ggaaaaaata atttatccac attaa 345

<210> 3386
<211> 231
<212> DNA
<213> B.fragilis

<400> 3386
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aaggtttcat tcaactgcaga gcagattcgc gacaacgcga aagaattcat ctctacattg 120
aataagttga aaccgactgc agccaagggg acatatatta agagtattta tctttctagt 180
acaatgagtg cgggtatcaa aattgacccg aaatcagtag aggaaatcta a 231

<210> 3387
<211> 1233
<212> DNA
<213> B.fragilis

<400> 3387
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<210> 3388
<211> 927
<212> DNA
<213> B.fragilis

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<210> 3389

<211> 573

<212> DNA

<213> B.fragilis

<400> 3389

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ggtacagtgg	atgaactgca	agaaacgggt	gaagacttaa	atgttccgta	tattgtaggc	420
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<210> 3390

<211> 543

<212> DNA

<213> B.fragilis

<400> 3390

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aaacaaggca	agatgggtcta	tcagagtgc	tcaaaagcgg	attgttcata	cttcaattgg	540
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<210> 3391

<211> 270

<212> DNA

<213> B.fragilis

<400> 3391

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gcgctgaaga	agtttaagag	aaaatttgaa	aaaactggca	tcgttaaaga	gttgagaagc	180
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<210> 3392

<211> 417
 <212> DNA
 <213> B.fragilis

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 gctaaggaca tggtagacgg tgctcctagt gtagtaaaag aagggtttggc taaagacgaa 360
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<210> 3393
 <211> 2871
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (2274)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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gtagaagagt	attcactcga	agttcgtgaa	accaagcgag	gaatggaaga	gttgacttct	2460
gatattccta	acgtgagtga	ggaagccact	aaggatttgg	acgagaatgg	tatcgtacgt	2520
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tctgatcctt	ctccggaaga	aaaattgctt	cgtgctatct	ttgggtgataa	agccgggtgat	2640
gtgaaagatg	cttctttgaa	agcatctcct	tctctgaagg	gggtaattat	tgataagaaa	2700
ctgttctcac	gtgtcatcaa	gaatcgtagt	tctaagttgg	ctgataaggc	gttgcttccg	2760
aaaattgacg	atgaatttga	gtctaaggta	gctgacttga	aacgtatctt	ggtaaaaaaa	2820
ttgagtggtc	accacagggg	ctctcaggaa	cgggctctc	aatgggccgg	a	2871

<210> 3394

<211> 1788

<212> DNA

<213> B.fragilis

<400> 3394

aagatgaaaa	ctataaataa	attattcaag	ggatatttct	tttgactttt	agttagtgtg	60
agtgttagta	gttgcgactt	ggaagtggag	cgcctgcta	atattgcggc	cgaacatat	120
tggacatctg	aaaaagatgc	ctgggtataat	ctgaattcaa	tttattctgc	tgcgattccg	180
ggatttggaa	tttacggaga	tgcttattcg	gatgatgtat	attgccaaata	tgcacatgaa	240
tctaacgcaa	aaatattcca	gcaagatggt	tttagccctc	tttatgatga	aggttggaac	300
tttgagacaa	ttcgttaagga	aaacttgttt	ttgcagaaag	ttggaaattg	tgagatggat	360
gaatctttta	gagaaaaggt	caaggcgaaa	gttcgtgcaa	tgcgtgcctg	gacttatttg	420
ggcatgacta	tgacgttcgg	taaagtgcct	ttgattactg	aagtactgga	ttataactct	480
cctaataattc	cgcgtgacga	ggtaagtgtg	attcgtgatt	ttattatgaa	agaacttact	540
gaggctgctg	caatattgcc	cgagaaatac	gctgggtggt	atccaaatga	aaagggacgt	600
atcacaaaat	atgcttggtt	gtcattgaaa	gcaagagcgg	ccctgtatct	tggggactat	660
gcttttagcag	aatctactgc	gaaggaagtg	atggataagg	gaggcttctc	tttgtttaaa	720
atatcttctt	tgtcgggatgc	acagaagaaa	gaggcagaag	aaatgagttt	gtatattgat	780
tttgcagaaa	aaggaatcga	taaagacgaa	ttcgtaagg	gtatgtttta	ttatgaagct	840
ttgtggcata	cagaaaatgc	taatccggat	aatcccgaat	acattatgac	tcgtcaatat	900
gctgcttcca	gttgggatta	tcaagatatg	actcgttata	caagtatgcg	cccgaatcag	960
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ataaaggctg	acttggatgc	ttatcaaaag	cctgaaggag	aagctaagtt	tattgctttc	1140
tgccaggaaa	agataaaagaa	tggaaacattg	aaagattata	aatatattca	agagtccgt	1200
aaccgtgata	gccgtatgta	tgtttctatc	ttgatgccat	tcaagagttg	gtatgaatct	1260
aattatggtg	ataagtttgt	gtatgaatgg	ataaagaatg	gtaataacga	atcaaagacc	1320
ggatttaact	tccgtaagat	gctttcattg	gaaaatgatg	ctaattggcg	cggacaggcg	1380
accggtgatt	atccttgat	ccgttatgct	gaaattttat	tgatttatgc	tgaagcgcac	1440
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tgcggtatgc	cggatgttcc	ttctggcttg	agcaaagaag	aaggctctgaa	actgattcag	1560
aacgaacgtc	gtattgaatt	ggccgggtgaa	ggtttccgtg	gtgacgatat	gactcgttat	1620
agcgatgatt	actggaaaga	gcacatgaac	aatgtaccta	tcatgactcc	tgacggtgat	1680
acggaactta	caatgaaatg	gagctctcgt	atgcgtctga	aaccaattcc	gcaaacagct	1740
attgacttaa	atccggttatt	ggctgggtgat	cagaatccgg	gatatttaa		1788

<210> 3395

<211> 234

<212> DNA

<213> B.fragilis

<400> 3395

agggtgaaaa	aggggggtggc	ggtaaacccg	atagccataa	aagcccaagt	gctgaccggc	60
gggcgggggaa	aagccggcgg	agtaaaagttg	gccaataatg	atagagatgt	ctaccaatac	120

gctcaaacta	ttttggagat	gactataaaa	ggttatcccg	tcaccaaaaa	ttttcttaat	180
gaggctggca	acattggcag	ccgaatatta	catcaatttt	acgatagacc	gtaa	234

<210> 3396

<211> 2007

<212> DNA

<213> B.fragilis

<400> 3396

cggggggacta	gaatagactg	cttaagatac	tctctgcccc	gcggtgaaga	cagcacttcc	60
gataatgata	aaggaggagt	tgtttataca	cacttggtga	caattccgtc	aacttatgtt	120
gctcgtcaaa	gtaatggtga	atggggtagc	tatgaagggtg	gaaagccggc	tgcaacagta	180
aatatggagc	gtaacccttt	acgccgtttg	gaagaaggag	gatggtcgaa	cagtaagact	240
cagaatactt	tgataaatct	ggcttttagat	attaaacctg	taaaaggact	ggtattgaca	300
ggcgaaatga	tttataaagc	ttgggattat	aatctaaga	cttatactgc	aaataaaaagt	360
aagattaagg	atttccagac	cggtactgag	ttgaatggta	cagatgtaac	taattctaag	420
atggagtaga	gttgggaaga	aaacagtcgc	cttacttata	atgcattggc	taattacgtt	480
tggagtaatg	aaaaacataa	tgtgaatgta	ttggctgggtg	tatcttatga	acattataag	540
tatcagaaac	aaaaatcata	tcgctcgaaa	ttcccgacta	atgggtatgac	ggacatgaat	600
ggtggctcga	gtgcgccaga	tgatacttat	gctgaagggtg	gaagtaacga	agacaaactg	660
atgtcttact	ttggctcgtgt	aaattactcc	tttatgggac	gttattttatt	agaggccaat	720
atccgtgctg	atgcttcttt	tgcctttcat	aaggataatc	gttgggggtgt	tttcccgta	780
ttctctgcag	gctggcgtat	tagtcaggag	ggatttatgc	aagatatcaa	ctggattaat	840
aacctgaagt	tgcgtgcatac	ttggggacag	ttgggtaata	tcaatgacgt	aggccaatat	900
gattatttct	cttcataatca	acaaggagggt	aactacaact	ttgaagatgc	tattgtttcg	960
ggtatcgtag	aatctaaacc	tgccaatccg	actttaggat	gggaaactgt	tactatcact	1020
gatatcgggtg	tggatttttga	cattttcaat	ggactggtga	attttacagc	cgattattat	1080
aacaaaaaaa	cagatgatat	cttgtttggca	tatccgagtc	cgaaagaaat	cggtattggc	1140
tctgatttca	aggtttcaca	aaatatgtgt	acagtaagta	ataaggggtt	agaactgagt	1200
attacacata	ataaaactct	gggtgacttt	gcataatcac	ttgggtttta	catgagtaag	1260
aactggaata	aagtaaccaa	cctgggagcg	aatgaccgga	ttattgaaag	cccatggatt	1320
aaaaagggtg	gttatgcaat	cggtactttc	tatggatatac	gctctgatgg	tctgttgact	1380
caggaggata	ttgataccgg	taattacatc	accgatgggt	tggtgcctca	agcgggtgat	1440
atcaaatatg	tagattttaga	tgggtgatgg	aaacttaccg	ataaagatag	aacttatata	1500
ggttgtgatg	ttcctgacat	tacttatggg	gtgaacctga	atcttcgcta	taaaggattt	1560
gaattaagta	tgttcgggtca	gggagttacc	ggtacaaagg	taaacttcag	tatggaaaat	1620
gcctgggcat	tctcggatta	tgcaagtcgg	cgtaaatatc	acttgaagag	atggacggta	1680
gataatccta	acccgaatgc	agcttatcct	cgcatttatc	ctcgtacaag	taaacattca	1740
acttataacc	aataatttct	tgattactgg	ttgcttaatg	ccgattatct	ccgcatacag	1800
aatataactt	ttggatatct	tttccaaaag	ccggtattac	agaagctgag	tctggaggca	1860
ttgaaactct	atgttgccgg	tgaaaatccg	tttactatct	gtgctgatca	ccgatgggaa	1920
gatttcgacc	ctgaaacggc	ttcaggacgc	ggcgtaata	ctcgtggtac	gtcttcgatt	1980
gcttttgggtg	taaatctaac	attctaa				2007

<210> 3397

<211> 1218

<212> DNA

<213> B.fragilis

<400> 3397

gttaaacata	atttgaagac	aatgaaaaag	agcattttta	ttgcagttct	gacagcgtcg	60
atagctactt	ccgctttttg	acaatggaaa	ccggcaggag	acaaaatcaa	gacaaagtgg	120
gctgagcagg	tgaatcctga	aaatgtattg	cccagagtac	cacgtccggt	gatggaacgg	180
ggagagtggg	agaacctgaa	tggtttgtgg	aattatgcca	tcaccgagaa	aggagctgct	240
ccttcagctt	acgaaggcca	gattctgggt	ccttttgcca	tagagtcag	cctttcgggt	300
gttggttaaga	aagtcggccc	cgacaaagaa	ctttgggtatc	agcgtacttt	cacagtaccc	360
gcttcctgga	aaggtaaaaa	agtgatgctg	aacttcgggtg	ctgtagactg	gaaagctgat	420
atttgggtca	atgacattaa	ggtgggacaa	cacaccggag	gatttactcc	tttttcactc	480
gatattacgg	ctgcttttgg	tactaaagga	gacaataaac	ttgttgtgaa	ggtatgggac	540

ccgacagatc	gcggaacctca	gcctcgtggc	aaacaggtaa	accgtccgga	aggcatctgg	600
tatacggctg	ttaccgggat	ctggcaaact	gtctggatgg	agcctgtggc	cgaacgtcat	660
attactaatg	ttcgtacgac	ttcggacatc	gaccgtaaga	aactcacagt	ggacgttact	720
accagtacca	gctgtccttc	ggaagtgtgc	gaagtaaagg	ttttcgatgg	taaacagctg	780
gttgctaccg	gaaaaggatt	gaacggccag	actattgaca	ttcagatgcc	tgctgatgct	840
aaactgtgga	gtcctgcttc	tccgactctt	tattctatgc	agattgccct	gttgagcaat	900
ggtaaagtga	ccgataaagt	agatagctat	acagctatgc	gcaaatactc	taccgcgcgt	960
gacaaggacg	gaattgtacg	tttgcagctg	aacaatgaag	atgtgttcca	gtttcgggtc	1020
tctcgatcaa	agatgggtggc	ccgacggact	gtatacagct	tcgacagacg	aagggggggg	1080
tatgatattc	aaaaaaccaa	agacttcgga	tttaacatga	tccgtaaaca	cgtgaagggt	1140
gaaccggcac	gttggtattc	acactgtgat	aaactgggta	taatcgtatg	gcaggatttg	1200
cccaaatggg	aaccgtaa					1218

<210> 3398

<211> 2076

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (654)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3398

aaacacccaa	acatgaaaaa	gatgaaaagt	ctgaaaggag	gcttgccggg	aatcctat	60
acagccggat	tactggcagc	atcgtgtact	tccgatcaat	catcgtcggc	agtaaccatc	120
gtgaaccgcc	ccgactgtac	acaaaccaac	gtaaactatg	taggaaaccg	cttgccactg	180
aaaccgatga	atttcattaa	actgcccgtc	ggaagtattc	agcccgaagg	atggttgaag	240
aaatatctcg	aattacagaa	agacgggtctg	accggtcacc	tgaatgagat	cagtgcattg	300
ctggggcaaag	agaataatgc	ctggctgacc	aaaggaggag	atcacggatg	ggaagaagtc	360
ccctattggc	tgaagggata	cggaaacctg	gcttatatat	taaaggatca	gaaaatgatt	420
gatgaagcta	aagtatggct	cgaaggagca	ttcgccagcc	aacagcccga	cggatacttt	480
ggtcccatca	acgagcggaa	cggaaaaaga	gaattgtggg	cacagatgat	tatgctctgg	540
tgtctgcaat	cctattatga	atattcaaat	gaccaacggg	taatcgacct	gatgaccaat	600
tactttaaat	ggcagttaag	tgtaccggac	gaacaattcc	tggaggacta	ttngnaaaac	660
agccgtggcg	gagataacct	gttaagcgta	tattggcttt	ataaccgcac	aggagatcaa	720
ttcttactgg	aactggctga	gaagatacac	cggaaacacag	cagactggac	ccgcccgtcg	780
gactgcgaa	actggcacaa	tgtaaacatc	gcacaatggt	tccgcgagcc	ggctacctat	840
tatatgatga	caggagattc	agccatgctg	aaagcatctt	ataatgtaca	caatctgata	900
cgccgtactt	tccgacaagt	acggggcggt	atgttcgggt	ccgacgaaaa	tgcccgcgatg	960
ggttctatcg	acccacgtca	gggagtagag	acctgcggat	tggtagaaca	gatggcttcc	1020
gatgaattga	tgttttgtat	gacgggtgat	ccgctttggg	cagaacactg	cgaagaagtg	1080
gctttcaaca	gttatccggc	tgcctgtgat	ccggatttca	aaggattacg	ttacatcact	1140
tgccctaacc	agacgggtcag	cgactcaaag	aatcatcatc	cgggcatcga	caaccgggga	1200
cctttcctgg	caatgaaccc	gttcagcagc	cgttgtgtcc	agcataacca	cgcacaggga	1260
tggccttatt	atgccgagca	tctgattctg	gctactccgg	ataatggtgt	agcggccgcc	1320
atgtatgccg	cctgcaaagc	aacggtgaaa	gtgggtgacg	gaagcgaaat	aagccttcac	1380
gagcagacga	attatccctt	cgaggaaacc	atccggttta	cggtaaatac	tccgaaagct	1440
gtaagtttcc	cgttctatct	gagaatccct	tcattggacag	aggttgcaac	tatctttggt	1500
aacggcaaaa	aagtagcggc	taaccccgaa	gccggacaat	atgcctgcat	caatcgcgaa	1560
tggaaagaca	atgaccaagt	ggagattcaa	ctgccgatgc	aactttcgat	gcgtacatgg	1620
caagtgaaca	aaaacagtgt	aagcgtagac	tacggtccgt	tgacaatgtc	actgaaaatt	1680
gacgaagatt	atgtgaaaaa	ggacagccgc	gctacggcta	tcggtgactc	taaatggcag	1740
gaaggcgctg	acgccagcca	atggccgaca	tacgagatct	atgcaaaaac	tccttgggaa	1800
tacgatttgg	tactcggtaa	gaacgaacct	ttcaaagagt	ctatcgagggt	aaaagctatc	1860
tggccggctg	acaacttccc	gttcacggctc	gcaagtacac	ctatcgagggt	aaaagctatc	1920
ggacgcgaag	ttccttcatg	ggttatcgat	caatacgact	tgtgtagcga	acttctctgaa	1980
atggacgctc	cgaaggggga	aaaagaagaa	atcaccttga	ttccgatggg	agcagccaga	2040
ctgcggggtt	cggctttccc	gaacacaaga	gagtaa			2076

<210> 3399
 <211> 1587
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (194), (1550)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3399

ctctcagcag	tggtggccgc	gtatggtgat	gctgaaaata	ctccagcaat	attattctgc	60
cacgaacgat	caacgggtca	tccggtttat	gaccgactat	ttccgttatc	aactgaaaac	120
gttacccgaa	aagccgctcg	gcaactggac	tttttgggca	gagtttcctg	gccttgcaaa	180
aatatccagg	ccgnatactg	gctctataat	atcaccgggtg	attcattcct	actcgatctc	240
ggcaaaactga	ttcatcaaca	aagtttcagc	tttgtagata	tggtgaaccg	gggagacctg	300
aaacgtatca	atacgattca	ctgtgtcaac	ctggcacaag	gtatcaaaga	gcctgtcatc	360
tattatcagc	aagagcccga	caaaatgtat	ctcgatgcgg	ttaaatgtgc	ttttcgtgac	420
attcgccagt	tccacggaca	accgcagggt	atgtatggtg	gtgacgaggc	attgcatggc	480
aacaatccga	cccaagggtc	agaactctgc	tcagctgtgg	aactgatgta	ctcgctggaa	540
aaaatggtag	agatcacggg	agatatcgac	ttcgccgacc	atctggaaag	gattgcattc	600
aacgcactgc	ccaccagat	ttcagacgat	tttatgacaa	aacaatattt	ccaacaagcc	660
aaccaggtga	tggtatcacg	ccatcgctgc	aatttcgatc	aggatcacgg	aggaacggac	720
aactgttttcg	ggctgctgac	gggatattcct	tgttgtgcat	cgaacatgca	ccaaggttgg	780
cctaaattca	cccaaagcct	ctggtatgcc	actcctgacg	gtggactggc	tgttacggca	840
tacgctccat	cggaaagtga	ggccaaagta	gcggatgggt	gtacggtaac	tttcagtga	900
gaaacctatt	atccgatgga	tgacaaaata	agtttcaccc	tccaatcgat	ggacaaaaaa	960
cggaaagaag	taaacttctc	tctccaatta	cgtatcccga	aatggtgtag	acaagccgga	1020
atatcagtca	acggacaact	tcttcaacat	gccgaaggag	gccgatggc	cattgtcaac	1080
cgcaactgga	aaaaaggggg	ccgggtggaa	ctccatctgc	cgatggaagt	cactgccagc	1140
acctggtatg	aaaattcggg	aaccattgaa	cgcggtccgt	tggtatttgc	cttgaagatg	1200
gaagaaaaat	gggagaagaa	agagtttgaa	gagccgtggt	atggtccgta	ttattactca	1260
gtgactccta	ccgaaccatg	gaactatgga	ttggttgatt	tcaatcgtaa	caaagcgaac	1320
gaacatgccc	gtgtaacgat	tcatacggaa	aagcaatctt	ccgtattccc	ctggaataag	1380
gaaaatgccc	cgatagaaat	acggatgaaa	gcaagattgg	taccttcatg	gaaactttac	1440
aacgaaatgg	cagggcctca	accttattct	ttctgtagcg	gaggcgaaag	ggccggaaac	1500
agaaatcacc	ctgaattctt	atggatgcac	tacattaaga	atacgggaatn	tccggtagtg	1560
ggagccttcc	gattgagagg	tgattaa				1587

<210> 3400
 <211> 735
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (679)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3400

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ctgggcctct	gcttctcttc	cttgggaagc	gggctccggg	ccgatacccc	cgagaactat	120
accaacaacc	gctatccatt	ggtagcga	cctttgatgg	aactaccgtt	aggcagcatt	180
aaggcaaaag	gatggttaca	ggaaatggtg	gtaaggcaga	aaaacggggc	aaccggggca	240
atggacaaac	tgatatccgt	ggtgatgggc	gaacgcaacg	gctggctcgg	cggcgacggt	300
gatcaatggg	aaagaggacc	atactggatt	gacggtttac	ttcctctggc	atatatcctg	360
gacgatgcgc	aactgaaagc	taaagtgcaa	ccttggatag	aatgggcttt	aaaaagtcag	420
cgggaagacg	gtttcttcgg	tccggccaaa	gactatcccc	gagaggccgg	catacaacgg	480

gataactctc	acgactgggtg	gccgcgtatg	gtgatgctga	aaatactcca	gcaatattat	540
tctgccacga	acgatcaacg	ggcatccgg	tttatgaccg	actatttccg	ttatcaactg	600
aaaacgttac	cggaaaagcc	gctcggcaac	tggacttttt	gggcagagtt	tcttggcctt	660
gcaaaaaatat	ccaggccgna	tactggctct	ataatatcac	cggtgattca	ttcctactcg	720
atctcggcaa	actga					735

<210> 3401

<211> 183

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (168)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3401

cctttgggcg	gaaaaaagtt	ttttcattgg	aatgggggt	ttaagtcctt	tttccccttc	60
catttcaagg	cagggaaaaa	ggaggacttg	tgtatgaata	ttaggttatt	attaatatgg	120
ttcggaatga	ttaatcacct	ctcaatcgga	aggctccac	taccgganat	tccgtattct	180
taa						183

<210> 3402

<211> 1116

<212> DNA

<213> B.fragilis

<400> 3402

cagaaagcta	tgaaaacaaa	gatctacctg	ctatttatta	ctaccttatt	cttctgcgcc	60
ggttgtggca	acaagagcgg	cggacagaaa	caggagtcgg	taagtgcggc	aaaggataca	120
tatgtaaatc	ctttgtttcc	ggaaggggcc	gatccgagtg	ctcttttcca	taatggtaag	180
tattattata	cccatggaac	ggaagataag	atcatgcttt	gggaaacgtc	cgatatcact	240
gatatggctc	atgcggtttg	caagatagtg	tgggaagcctc	acgatccatc	caacagttgt	300
catctatggg	caccggagat	tcaactatct	aatgataaat	ggtatatata	ttatgcagcc	360
gacggcgaca	atgcggataa	tcaccagttg	tacgtacttg	aaaactcttc	acccgacccg	420
atggagggaa	agttcgaaat	gaaaggaagt	atcataacca	atcccgaatg	gaattggggg	480
atacaggcca	ccactttcga	acataaggga	gtccgctatc	tggcctgggc	cggatggccc	540
aaaaggagaa	ccaatgccga	aactcaatgt	atctatattg	ccaggatgaa	agatccgtgg	600
acactcgatt	cacccgtgtg	cctgatattc	aaacccgagt	atgaatggga	acggcagtg	660
gtcaatccgg	atggcagccg	tacggcttac	cccatttatg	tgaatgaagg	gcctcagttc	720
ttccattcga	aagataataa	gacgttgatt	ctatattacg	ctgccagcgg	ttcgtgggtc	780
ccctattact	gtgtcgggat	gttgactgcc	gatgccgaga	gtgatttggt	agatccggct	840
tcttggaaca	agagttcggg	tccggtatct	cagcaatcgt	tggagaatga	agtttatggt	900
ccgggtggac	tctcctttgt	tccctcgccc	gatgggactg	aatgggtatat	gattttaccat	960
gcccgtcagg	tgaccaatgg	agacaccggg	agtcctgaaa	cccgtaatcc	gcgaatacaa	1020
aaaataggat	gggatgccc	tggaatgcc	gatttgggga	ttccgggttcg	tgcagggggt	1080
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<210> 3403

<211> 2223

<212> DNA

<213> B.fragilis

<400> 3403

tattatgaat	caatgaaatt	aaattctttt	cctcactatc	tccagttgga	tgctatggat	60
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actctccgtg	cacgctcttt	tattaccogt	gaaggagttt	ccatgctggg	catcagcgat	180
gcggcggaat	cgatcggttt	ccgtacttcg	ggggtgcgca	tctcttttga	gcaactgaag	240
aaggatgtac	cgttgccctg	cattctgcat	tggaaaccaga	atcacttcgt	ggtctgttat	300

gatataaaga	agaaacgtag	cggtctaccgt	ttctatatcg	ccgaccccg	ccgtcagttg	360
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gaagaatccg	gcagtcgcag	tcttcgtttc	tttcttaaat	atttgcctcc	ttatcgtaaa	540
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gcggataaga	tcgtggtgct	ggataggggt	gctgtagccg	aagagggaac	ccaccgggaa	2160
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tag						2223

<210> 3404

<211> 612

<212> DNA

<213> B.fragilis

<400> 3404

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tattcacgtg	tactgaatt	gagggcggtt	gaggaactgg	ccggagaatt	gctggatgaa	180
gtgatggaga	gtgtctgctt	agggatgccg	gtcggctctg	ctttcggatg	gtgtgggtata	240
ggttgggggg	tggaaatctt	ggcccggaag	ggatttgtgg	aagatgatga	taatgaaggg	300
cgcaataaga	ttgatgagaa	agtatggag	tatgatgtca	ggcgcttggg	cgattactct	360
ttagctacag	ggttggaagg	aatttcatgg	tatgtattgc	ttagactcta	ttcgggagat	420
aaaggtgtaa	ggatagggga	aaaaaactat	ctgtctgatt	tgaaaagtgc	ttgtgagaaa	480
gcttttaaaa	aagggcggta	tgaggggata	cttctgttac	tggattttct	gaatgggaaa	540
agggcaaatt	atcctttcgg	ggagtttttt	tcacaaaattc	cgggagaagc	gcattatatt	600
ccggatatgt	ga					612

<210> 3405

<211> 672

<212> DNA

<213> B.fragilis

<400> 3405

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tttttggaaa	acatagctat	ttatgctca	gcaggtatga	ttcctgatac	cgaagatcag	180
actcattttt	atatcgcccg	ggtaaaacca	gaacgttttt	tggtagccgt	ttctgagatg	240
tctggttatg	aaaggggagca	taaatcgat	ttgaaggtag	cggtttggag	ggatccggta	300
gaaaggctgg	tttctgctta	taaatatttt	atacttgaac	gtaccttcaa	tcaatacatg	360
tacatgtgta	atctgtatca	ggattgttct	tttgaacgct	ttctttcgtt	cgttgagttt	420
gaattgggga	aggcaaatcc	gttgtggcag	gatgaacata	tacgcaggca	atctgatttt	480
tatacttctg	ctgatgtgga	ctgtattgta	cctctcagca	agttgaaccg	ttttttagcc	540
gagaggggag	tggatatgcc	ggaagaaaag	gcaaatagcca	catctgtccg	gtttgaactg	600
aaggatgaaa	aacagatagc	aaagataaaa	gaactatatc	gtcttgatta	tgaataacct	660
gttggttggt	aa					672

<210> 3406

<211> 720

<212> DNA

<213> B.fragilis

<400> 3406

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caaagtctgg	aaagaagggg	cagagagttg	tttgcgacag	gcaccgtagt	gtccggtagt	180
acataatttt	caagagtgat	ggattgcagg	tgttatgtcc	ccatgggtata	caattattta	240
tataggaggg	attttattga	acagaatgga	tttcgctttg	aaccgggggt	ggttcagtaa	300
gatgaattat	ggactcctca	ggtgctgaca	accgctcaaa	aaataacggt	tgccgatatt	360
gattttttatt	attaccggca	acgggaaggga	tcgattatga	cggcgacggc	agcgggcagg	420
cggattgctt	ccattcaatt	gattattgag	aagttactgg	aatatagccg	taagcacttg	480
tttgagaaaa	aatatagaga	ggcaaaggaa	gcactctatg	taaggctgtt	gcagatatat	540
tctactgcct	gtacattgca	tccggacgga	acttatacaa	ctttgtacga	tagggcgagg	600
gagatgcttc	gtgtttgtga	ggaactcagg	cggcaagagt	ctcttgggag	atgggtatagt	660
gaggaatcc	tcaacaggat	gaaactgtat	tatgaccggc	tccaaacgat	ggaaggatga	720

<210> 3407

<211> 627

<212> DNA

<213> B.fragilis

<400> 3407

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tcagttgggtg	aagaatcagt	tggaaattagg	aagttagata	tggaaaagga	gcacacacat	120
aaagagatcg	agcttcgtag	cgaagagggtg	caggaagtga	tgaatcgtgt	tccggcatgg	180
attcttcgca	gtggcattac	ggtgctgttt	gtcatagtgg	tggcattggt	tgccggaagc	240
tattggttta	aatatccgga	tgtgattgct	gccgaggtga	cggtaagcac	acaagatcct	300
ccggcttacg	tagtggcccg	agcagccgga	agactggaga	atctgtatgt	acaaaacggg	360
caggaggtgg	aacccgacac	gaatctgggg	acaatagaga	atacagcttg	tgcgtcggat	420
gtattctcct	tgcaagagcg	gatgcggaag	tggaaacagg	aaggatatac	gcctgagtcg	480
ggtaaagggc	tttttctaca	ttcggaaaca	gatcgctggc	ggctgggaga	gatacagtcg	540
gcctatgcgg	cgtttgtgag	tactctctcc	gaaatgggtg	gtatgaatga	attggggtat	600
tatgcaaaga	agttacagtc	gtcttaa				627

<210> 3408

<211> 768

<212> DNA

<213> B.fragilis

<400> 3408

agaccccagt	tggagagttt	tgagagtatc	accggaaaag	gtatcaaggt	ggtatatcag	60
ggtgacactt	attgggtggg	cagccacaaa	ttgctgaaag	atttcagtgc	ttctctttct	120
gacgtacttg	ccgagatgat	ggtgcaatac	gaatcggacg	ggaacagtat	cgtttacttt	180
ggccgtggaa	cagaggtact	tgccgttgct	gccattgccg	accagataaa	gccgaacttc	240

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gccgagcgcg tgaaggaact gaaacgtcag ggcacgcaca tttgcatgct gaccggtgac 300
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gccttgccgg atgataaaga agagttttgtg cgtgagctcc agatgcaggg caaaacggtt 420
gctatggtgg gtgacggaat caatgactca caggcgttgg ctttggctga tgtcagcata 480
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gatctgctgt tgctgccccg tgcattcgaa ctctccaagc aaacagtaaa actgattcac 600
cagaatctgt tttgggcggtt tatctataat ctgataggca ttcccattgc agccggaatc 660
ttgttccctg tcaacggggtt gctgctcaat ccgatgcttg ccagtgcagc gatggcattt 720
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<210> 3409

<211> 204

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

(1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17), (18), (19), (20), (21), (22), (23), (24), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46), (47), (48), (49), (50), (51), (52), (53), (54), (55), (56), (57), (58), (59), (60), (61), (62), (63), (64), (65), (66), (67), (68), (69), (70), (71), (72), (73), (74), (75), (76), (77), (78), (79), (80), (81), (82), (83), (84), (85), (86), (87), (88), (89), (90), (91), (92), (93), (94), (95), (96), (97), (98), (99), (100), (101), (102), (103), (104), (105), (106), (107), (109), (110), (111), (112), (113), (114), (115), (116), (117), (118), (119), (120), (121), (122), (123), (124), (125), (126), (127), (128), (129), (130), (131), (132), (133), (134), (135), (136), (137), (138), (139), (140), (141), (142), (143), (144), (145), (146), (147), (148), (149), (150), (151), (152), (158), (159)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3409

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nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnntn nnnnnnnnnn 120
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn ncccccnng gacctctgtg ttactctgtg 180
ccctctgtgg tgagttcgtt ttga 204

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<210> 3410

<211> 192

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222>

(1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17), (18), (19), (20), (21), (22), (23), (24), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (46), (47), (48), (49), (50), (51), (52), (53), (54), (55), (56), (57), (58), (59), (60), (61), (62), (63), (64), (65), (66), (67), (68), (69), (70), (71), (72), (73), (74), (75), (76), (77), (78), (79), (80), (81), (82), (83), (84), (85), (86), (87), (88), (89), (90), (91), (92), (93), (94), (95), (96), (97), (98), (99), (100), (101), (102), (103), (104), (105), (106), (108), (109), (110), (111), (112), (113), (114), (115), (116), (117), (118), (119), (120), (121), (122), (123), (124), (125), (126), (127), (128), (129), (130), (131), (132), (133), (134), (135), (136), (137), (138), (139), (140), (141), (142), (143), (144), (145), (146), (147), (148), (149), (150), (151), (157), (158)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3410

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nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 60
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnntnnn nnnnnnnnnnn 120
nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn ncccccnngg acctctgtgt tactctgtgc 180
cctctgtgtg ga 192

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<210> 3411
<211> 186
<212> DNA
<213> B.fragilis

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<220>
<221> unsure
<222>
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,(35),(36),(37),(38),(39),(40),(41),(42),(48),(49)
<223> Identity of nucleotide sequences at the above locations are unknown.

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<400> 3411
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ttactctgtg ccctctgtgg tgagttcggt ttgaaaggaa ttgttatttt ctggccagac 120
tcagtgaatt cagcaccgaca cttacacttg aaaatgccat cgctgcactg gcaagcatcg 180
gattga 186

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<210> 3412
<211> 2304
<212> DNA
<213> B.fragilis

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<400> 3412
cttgtgtcac cctgtgcagt ctgcggtgaa tcctatctgt ttcttattga atataaaccg 60
aataaaaaaag acaaacgaag aaatttaatg aaatacatgt tattgaccgg actgcttctc 120
ggcagttctga ccgtacaggc gcaagtgcgc ggtacgggtga aagatcaggc aggcgaaccg 180
attataggcg ccaacgtttt ctggaaaaaac atttccgggtg gggtagccac tcgtgaggac 240
ggtacttttt ccatatctaa acccgacaaa tccaatcatc tgatcgtaag ttttatagggt 300
tacgaaaacg acaccataca agtgaacgat aagaaagccg ttctggacgt ggtgctgcgc 360
gaaggaatgg aactgagtga agtgcagatt gtcagccgta agttgagtac gctgaagttg 420
tgcagcagtg tgatgaacga agagatcatt accagcgacg agctctgccg tgcggcatgt 480
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accgagaata tcccgaacta tcgtggtgct gcttctcctt atgggttggg ttatgtgccc 660
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aaggcacacg acggcaatga tgacggcttt gccgatattc cccgataga gcagtataac 960
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cgtgcgcaca ttaagtacaa cccaatgac tttgttcatt tccgtctttc cgccggaaag 1560
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gtgagcatcg ccgatcatct cgatcaggaa gaggcttgga attatggagc aagcatatcg 1680
ggatatatcc cgcttttcgg gaagacgctg aacctgaacc tggaatacta ttacaccgac 1740

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ggattctcgc	tgaactgccg	atctcgctgg	acagacgcca	agactaccta	taatcatcaa	1920
ttgatggaga	agcccccgac	gggaaaatat	aaaggcctcg	tactgcctc	ttatcagact	1980
ccgctgggtt	tgtggcagtt	tgatgccaca	tggcagatga	acgggggagg	acgtatgccc	2040
aatccgtaca	cacttgccga	cggaacctct	tcgtgggatg	cacgctacaa	aggcttcagc	2100
caactcagcg	cccaagtga	acgctacttc	cgccgctgg	cgatatacat	cgggggcgaa	2160
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cgttttgact	cgacatgat	atgggggccc	gttcatggag	cgaaagggtta	tatcggagtc	2280
aggttcaatc	tggcgagaga	ttaa				2304

<210> 3413

<211> 573

<212> DNA

<213> B.fragilis

<400> 3413

ataatgaaga	caaatgaagt	tttagagacc	attaaggcac	ggcgtagtgt	acgtgcgtat	60
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ccgagcggca	tgcattatga	aacgtggcat	tttactgccg	tctgtaatac	agtgaaactg	180
gaagaactga	atgaacggat	caaaggggca	tttgccaaaa	gtgatgacaa	gcatcttcgg	240
gaacgggggc	acagtgagac	gtattgctgt	tactatcatg	ccccaacctt	ggtcacgtg	300
tccaatgaac	ccaagcaatg	gtgggcccgg	atggattgtg	cctgtgctat	cgagaatatg	360
tttctggcag	ccacttcact	gggcatcgct	tcctgttga	tcaatcagct	cggtagcacc	420
tgtgatgac	cggaggtacg	ggcctatctg	acttctctcg	gagtggccga	aaatcataaa	480
gtttatgggt	gcgtagcttt	gggatataaa	gcggaaggcg	cattgttgaa	agaaaagaca	540
gttaaagccg	gtacgataac	catcgtggaa	tag			573

<210> 3414

<211> 720

<212> DNA

<213> B.fragilis

<400> 3414

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gagtcggata	gtttgagtgt	ccggcatggg	caagagaatg	cattgtcgg	ttcggatgaa	180
tatccggaa	ggtagtttcc	tggtccgggc	attcggatc	aggcgaacta	tcttaccgga	240
aatccggagc	gtcttgacgt	gaaggctgca	ttgcggaatg	tccgtccgct	gaagttgagt	300
caattgggca	gtcagcttga	tttcatggta	tttaaagatg	tgaaaggagg	catcttcgc	360
ctgataccga	ttgaagagg	ctgtttggga	gtggggattg	gtggcatctg	gctgctggat	420
gggaacctga	aaatgattcg	gatgttgtt	cgcaatgatg	tggatattac	ggaagaaaat	480
ggatttacca	actttcagac	gaagcgttac	atcaatccgg	attattatga	aaagtcttcc	540
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<210> 3415

<211> 918

<212> DNA

<213> B.fragilis

<400> 3415

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<210> 3416

<211> 2016

<212> DNA

<213> B.fragilis

<400> 3416

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<210> 3417

<211> 2862

<212> DNA

<213> B.fragilis

<400> 3417

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<211> 2214

<212> DNA

<213> B.fragilis

<400> 3418

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<211> 645

<212> DNA

<213> B.fragilis

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<210> 3420

<211> 399

<212> DNA

<213> B.fragilis

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<210> 3421

<211> 957

<212> DNA

<213> B.fragilis

<400> 3421

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<210> 3422

<211> 438

<212> DNA

<213> B.fragilis

<400> 3422

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<210> 3423

<211> 321

<212> DNA

<213> B.fragilis

<400> 3423

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<210> 3424

<211> 849

<212> DNA

<213> B.fragilis

<400> 3424

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gggcagttgc	acctgctgca	tgtttcatcc	aaagagggtg	aagtagtagt	gggcaaaacc	780
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<210> 3425

<211> 1404

<212> DNA

<213> B.fragilis

<400> 3425

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acagcagccc	ttttgatctg	ctgttacacc	accgtgtggt	taggcattgca	cggtttctat	180
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<210> 3426

<211> 849

<212> DNA

<213> B.fragilis

<400> 3426

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<210> 3427

<211> 666

<212> DNA

<213> B.fragilis

<400> 3427

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tcgggcatg	tgctgtttca	gggaagcatc	ggacgggccc	acctggcccg	aggcaacttt	540
gatgaactga	aagaacatat	ctgcagccgc	ctgttcctgc	ttcccaacga	aacaatcgta	600
tatccggggc	acggagcacc	gactaccatc	ggaatagaga	aggcggaaaa	tccgttcttc	660
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<210> 3428

<211> 390

<212> DNA

<213> B.fragilis

<400> 3428

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gtgataaaac	ctctgtccat	ggaaagtgcg	gtacagacca	caccacccat	taccaatgaa	180
gccaccatgc	ctgaagggcc	tttcaaccgc	acagccacca	taacgaccga	tgccagaatc	240
aatgtcatca	gagtcatgcc	cgatacggga	ttagtgccca	cgatagcgat	tgcatgtggc	300
gctaccggtg	tgaacaggaa	tgaaattccg	gccaccagca	ggatagctac	cagtgtatgc	360
accaggttgc	cttgcacac	atcgaaatag				390

<210> 3429

<211> 891

<212> DNA

<213> B.fragilis

<400> 3429

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atattaaata	tctacaaaaca	atcatgcagg	ctgaaagccg	gcattcttgc	tatttgtacg	180
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atcacactgt	taccgggtac	cattatccaa	ttccgcgaac	gcacggaaaa	agtacgttta	300
tgctttgcgg	gattctcatc	ggaatgcgta	gaacgcacat	atctgataaa	atcaatggtc	360

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<210> 3430

<211> 714

<212> DNA

<213> B.fragilis

<400> 3430

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gacttgacgg	aagagcaacg	caaacaattc	gctgcgcttt	acgaacttta	cattgactgg	180
aattctaaaa	tcaacgtaat	ctcacgcaag	gatatcgaga	atctgtacga	acaccatgtg	240
cttcattcgc	tgggtatcgc	ccgtgtcatc	cgtttccggg	ccggcagcag	tgtcatggac	300
ctcggtagcc	gaggaggatt	ccccggaata	ccgttggcca	ttctttttcc	ggacacgaaa	360
ttccatctgg	tggacagcat	cggcaagaaa	gtacgtgtgg	caaccgaggt	agccaatgcc	420
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gacttcgttg	tcagccgtgc	cgtgatgccc	ctggccgacc	tgataaagat	tatccgaaa	540
aacatctcgc	ccaaacagca	aaatgctctc	cccaacggac	ttatctgcct	gaaaggaggc	600
gaactggaac	acgagggcat	gccgtttaag	cataagacaa	gtatgcataa	cctgaatgaa	660
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<210> 3431

<211> 405

<212> DNA

<213> B.fragilis

<400> 3431

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agctcagctg	ccagcagaac	attcttgaaa	tgctcttcct	gtacttgggc	ccaaagccat	180
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ttgccgatgc	ccaccatcag	agcggtagga	gtagcaagtc	ccaaagcaca	cggacaggca	360
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<210> 3432

<211> 1017

<212> DNA

<213> B.fragilis

<400> 3432

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tcggccgcca	tgcaggctat	tttccagacc	atccggaaat	ttgccgatac	ggacgccaat	180
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cgcgaaccca	tcagcgaagt	actccggctt	tgtgccggca	acattacgtt	agcctcagaa	960
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<210> 3433

<211> 477

<212> DNA

<213> B.fragilis

<400> 3433

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ctccttatag	tatatgtagg	agcgggagtc	tctgttgccc	aatattgttg	cagtgggtgt	180
gaaacggcca	attgttgctg	tgccgacaaa	tgcggtctct	gtggtaagtt	tgactttgag	240
ttccataaat	catgccgggg	cgagggatgt	acggcgacca	tctataagct	tgatctggta	300
aagcaggcat	tcgaatcttc	tgttctctgt	cctgtcagct	tgttgctttg	tgaccaggta	360
tcggacttgc	tatgcgctct	tttcgcgcat	gagggtgttg	atcctcctta	tgtgataccg	420
ccaccaaga	caagttcccg	gcattatctg	gctctttatt	ctactttgct	tatttag	477

<210> 3434

<211> 1302

<212> DNA

<213> B.fragilis

<400> 3434

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gtccttgccg	aaagagcaga	gattctgtcc	tccacccctt	ccgtggggag	ccggatattc	240
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cataagtggg	atataatcat	ttgcctaata	gtaatcggtt	tgtgcctttc	tttcgtagtg	420
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ggagaaaagg	cagaggggtt	caagggtata	gaaatggagg	ttatcgacga	agccagggcc	1260
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<210> 3435

<211> 801

<212> DNA

<213> B.fragilis

<400> 3435

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<210> 3436

<211> 666

<212> DNA

<213> B.fragilis

<400> 3436

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<210> 3437

<211> 915

<212> DNA

<213> B.fragilis

<400> 3437

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<210> 3438

<211> 186

<212> DNA

<213> B.fragilis

<400> 3438

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aaggtaaggg	tgattaaatg	tgattttccg	acttcggtag	tgaccgagat	ggtagattcg	180
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<210> 3439

<211> 909

<212> DNA

<213> B.fragilis

<400> 3439

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<211> 981

<212> DNA

<213> B.fragilis

<400> 3440

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<211> 228

<212> DNA

<213> B.fragilis

<400> 3441

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<211> 1542

<212> DNA

<213> B.fragilis

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<211> 186

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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 <212> DNA
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cgggtgcaagc	tcgagaacta	tgagcaggcc	gtcgtatcct	tactcttcac	ttttccttcc		240
acttccagca	gtcgtgtcca	cgactatctt	aaagaacatt	atcctgattt	tccaaacgtc		300
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<210> 3451
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 <212> DNA
 <213> B.fragilis

<400> 3451

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<210> 3452
 <211> 450
 <212> DNA
 <213> B.fragilis

<400> 3452

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ataacgatta	atttccatta	ctgcatgggc	cgtcttgccg	atgtagagtg	gggaagtgcg	180
tccgtttgtg	catcgtgtgg	agagaagaag	atgacctcac	attgttgtaa	agacgaggcg	240
cattacgtca	aactggcggt	agatcaggat	gtgaaccacg	taccggtaac	taatctatta	300
ccggcagtga	cagaactgtt	acctgtgatg	tatagtgcct	ttataccatt	ggaggcagaa	360
agtctgcgtc	gaagtgttgc	ttcttttcaat	ttccacactt	ggcaaacaga	tattccgctg	420
tttgttcatc	attgtactta	tctgatttag				450

<210> 3453
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 3453

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gggctgccca	ttcctcccat	accggacatg	ccactccccg	aagaaagtgc	aggcggcatc	180
gaagcaactg	acgttacaga	agtcgacgag	ggagctgcct	gtgccgacga	agcggaaaag	240
cggttcagtg	ccaactgctc	gagttga				267

<210> 3454
 <211> 207
 <212> DNA
 <213> B.fragilis

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ggattgcttc	ataaaagaga aacgaatgct ttgtcaaagg ggagaaaacg ccctgttgaa 120
agggaatggc	agacctctcc caaaggaaaa atcgcacgac ccaaagaagg cagtcagcct 180
gccgaagaga	aaaaacctac tatctga 207

<210> 3455
 <211> 258
 <212> DNA
 <213> B.fragilis

<400> 3455	
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gattgttccc	ggaagacaaa aatattatct ttctcgataa acaaacctac tcaaaagaat 180
gaaacctgtt	ttgcatgcct gagtacagta aaaaaatagc ggagaagtca tgctgcgttg 240
ttctatagcc	gcttgtga 258

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 <211> 417
 <212> DNA
 <213> B.fragilis

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agcgagctcc	aggaatatgt cctgcagctc aaggacagcc tgataaagaa caggagagtc 180
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cacgtgaaag	gcaagccgga taacctgata tgtattattt cgattacgaa agtcagaaac 360
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<210> 3457
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 <212> DNA
 <213> B.fragilis

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<210> 3458
 <211> 186

<212> DNA

<213> B.fragilis

<400> 3458

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aaacaagaaa	ccgaaaaaga	gacgcaagaa	ttagctgatt	ttattttatc	aaaacttaat	180
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<210> 3459

<211> 360

<212> DNA

<213> B.fragilis

<400> 3459

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aagactaccg	gcaatgaatg	gaaaagccgg	gaattcgttc	tggagacaga	agagagcaaa	180
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ggtatgaccg	tacacgtcaa	atttgacatc	tccgcccgcc	agtgggagaa	ccgctgggttc	300
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<210> 3460

<211> 192

<212> DNA

<213> B.fragilis

<400> 3460

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aaattaataa	caaaaagcca	caaaaagatg	aaaatgtatc	cggttttttg	cgctcttatt	180
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<210> 3461

<211> 1353

<212> DNA

<213> B.fragilis

<400> 3461

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<210> 3462
 <211> 684
 <212> DNA
 <213> B.fragilis

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ggactgacta	cagcggcagg
ggcatgtacg	tcataggtat
agttacctgt	ttaaaagcat
aaacaagtac	tgaaaggagt
tatcagatgg	atacacagaa
aatccaaac	ggaacaatga
gtgacagtag	aacgaattga
	ataa
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	300
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	420
	480
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	600
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 <211> 276
 <212> DNA
 <213> B.fragilis

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	gtgggcagag
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<210> 3464
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 <212> DNA
 <213> B.fragilis

<400> 3464	
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gatgcggaag	agtatcgtgc
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gcaccgagtc	atattgtact
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ggtacatcgt	gcccgcacct
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gtagataatg	gacggagtgc
atccgatgtg	gtgcctgcat
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	acctatcggt
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	960
	1020
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aagtataacg	atgttgatgc	gtggggaaaa	ggacgagaac	ttcctaaatt	cgcgggcgaa	1380
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<210> 3465

<211> 288

<212> DNA

<213> B.fragilis

<400> 3465

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cggaaaggga	cgcttcaaaa	tccgaatgta	accctggaag	agctggagaa	gatagaaaag	180
gccacccgtg	aaaaggaaaa	agcggaaaca	caatattatc	tgcgcgccac	gctgatcttc	240
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<210> 3466

<211> 453

<212> DNA

<213> B.fragilis

<400> 3466

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<210> 3467

<211> 1632

<212> DNA

<213> B.fragilis

<400> 3467

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 <212> DNA
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 <211> 192
 <212> DNA
 <213> B.fragilis

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<210> 3470
 <211> 846
 <212> DNA
 <213> B.fragilis

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<210> 3471
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 <212> DNA
 <213> B.fragilis

<400> 3471						
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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

<400> 3473

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<211> 297

<212> DNA

<213> B.fragilis

<400> 3474

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<211> 540

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<211> 954

<212> DNA

<213> B.fragilis

<400> 3477

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<211> 2313

<212> DNA

<213> B.fragilis

<400> 3478

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<210> 3479

<211> 366

<212> DNA

<213> B.fragilis

<400> 3479

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aatcccacag	tagaagaatt	gaaagcctgg	attccactaa	gcggactacc	cgtaagaag	180
tttttcaaca	ccagtgggtg	agtatataaa	gagctgaaac	tcagcagcaa	gcttcctaca	240
atgactgaag	aagaacagat	cgccctttta	gctaccaatg	gcaaattagt	gaaacgccc	300
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<211> 207

<212> DNA

<213> B.fragilis

<400> 3480

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 3483
 <211> 585
 <212> DNA
 <213> B.fragilis

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 gaattgcttg ctgccagggg cttttgccaa cactggaccg aatcggaac ctgcaatacc 360
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<210> 3484
 <211> 1185
 <212> DNA
 <213> B.fragilis

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<210> 3485
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 <212> DNA
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<210> 3486
 <211> 549
 <212> DNA
 <213> B.fragilis

<400> 3486
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<211> 1101

<212> DNA

<213> B.fragilis

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<210> 3488

<211> 747

<212> DNA

<213> B.fragilis

<400> 3488

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<211> 1218

<212> DNA

<213> B.fragilis

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<211> 1434

<212> DNA

<213> B.fragilis

<400> 3490

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<210> 3491

<211> 963

<212> DNA

<213> B.fragilis

<400> 3491

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<210> 3492

<211> 1332

<212> DNA

<213> B.fragilis

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<211> 759

<212> DNA

<213> B.fragilis

<400> 3493

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<210> 3495
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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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gatacacgta	480
aacgagcaat	540
gcaactgaacc	600
tcagtttgctt	660
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gacatgtccg	780
gtttctccgca	840
gcccggctga	900
gtctgtgtac	960
gacagcatct	1020
cgtgccaaag	1080
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 <212> DNA
 <213> B.fragilis

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<210> 3499
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 <212> DNA
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 <212> DNA
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 <212> DNA
 <213> B.fragilis

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<210> 3502
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 <212> DNA
 <213> B.fragilis

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<210> 3503
 <211> 417
 <212> DNA
 <213> B.fragilis

<400> 3503
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<210> 3504

<211> 1173

<212> DNA

<213> B.fragilis

<400> 3504

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<210> 3505

<211> 936

<212> DNA

<213> B.fragilis

<400> 3505

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<210> 3506

<211> 1659

<212> DNA

<213> B.fragilis

<400> 3506

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<210> 3507

<211> 1185

<212> DNA

<213> B.fragilis

<400> 3507

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 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<211> 249

<212> DNA

<213> B.fragilis

<400> 3511

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<210> 3512

<211> 741

<212> DNA

<213> B.fragilis

<400> 3512

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<210> 3513

<211> 2112

<212> DNA

<213> B.fragilis

<400> 3513

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<211> 405

<212> DNA

<213> B.fragilis

<400> 3514

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<210> 3515

<211> 1215

<212> DNA

<213> B.fragilis

<400> 3515

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<210> 3516

<211> 2334

<212> DNA

<213> B.fragilis

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<211> 951

<212> DNA

<213> B.fragilis

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<210> 3518

<211> 513

<212> DNA

<213> B.fragilis

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<210> 3519

<211> 1350

<212> DNA

<213> B.fragilis

<400> 3519

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<210> 3520

<211> 885

<212> DNA

<213> B.fragilis

<400> 3520

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<210> 3521

<211> 2811

<212> DNA

<213> B.fragilis

<400> 3521

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<210> 3522

<211> 309

<212> DNA

<213> B.fragilis

<400> 3522

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gctatggtgg	catatcagtt	ttcactggag	aagctacagt	tgctgcaacg	taatgatacc	240
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<210> 3523

<211> 558

<212> DNA

<213> B.fragilis

<400> 3523

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gccacttatt	atcgttgccg	ccgcaaagaa	cggatgctcg	atccttccga	acaggaatat	480
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gaaaagtacg	actggtag					558

<210> 3524
 <211> 291
 <212> DNA
 <213> B.fragilis

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 ggggcactcc gggaggtatt ccccaagatc acctggcagg actcaccctg agtggtaaca 180
 ctggaggtac tcccctgtga ggagaccttc cgctgcgcc tgtcaaagaa ctgcggttat 240
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<210> 3525
 <211> 429
 <212> DNA
 <213> B.fragilis

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 gtctctatca ccgtctactt taaacagggg actgacctcg acatggcggc ggtgaatgta 360
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<210> 3526
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 <212> DNA
 <213> B.fragilis

<400> 3526
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<210> 3527
 <211> 186
 <212> DNA
 <213> B.fragilis

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 tcattggaaa tcgaaaaagc aatgaaagaa ttccgtaaag tatctttgga agaatacaag 180
 aagtaa 186

<210> 3528
 <211> 681
 <212> DNA
 <213> B.fragilis

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 gtgtacaggt tctcccggaa agtaagccgg cgtatctgga aatatgcctt gtcaaccccc 180
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<210> 3529
 <211> 1236
 <212> DNA
 <213> B.fragilis

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<210> 3530
 <211> 198
 <212> DNA
 <213> B.fragilis

<400> 3530

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<210> 3531

<211> 1182

<212> DNA

<213> B.fragilis

<400> 3531

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<210> 3532

<211> 1524

<212> DNA

<213> B.fragilis

<400> 3532

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<210> 3533

<211> 333

<212> DNA

<213> B.fragilis

<400> 3533

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<210> 3534

<211> 1389

<212> DNA

<213> B.fragilis

<400> 3534

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<210> 3535

<211> 192

<212> DNA

<213> B.fragilis

<400> 3535

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192

<210> 3536

<211> 3768

<212> DNA

<213> B.fragilis

<400> 3536

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<211> 882

<212> DNA

<213> B.fragilis

<400> 3537

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<210> 3538

<211> 1134

<212> DNA

<213> B.fragilis

<400> 3538

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<210> 3539

<211> 321

<212> DNA

<213> B.fragilis

<400> 3539

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<210> 3540

<211> 189

<212> DNA

<213> B.fragilis

<400> 3540

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<210> 3541

<211> 1047

<212> DNA

<213> B.fragilis

<400> 3541

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<210> 3542

<211> 594

<212> DNA

<213> B.fragilis

<400> 3542

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<210> 3543

<211> 642

<212> DNA

<213> B.fragilis

<400> 3543

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<210> 3544

<211> 354

<212> DNA

<213> B.fragilis

<400> 3544

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<210> 3545

<211> 1656

<212> DNA

<213> B.fragilis

<400> 3545

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<210> 3546

<211> 681

<212> DNA

<213> B.fragilis

<400> 3546

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<210> 3547

<211> 231

<212> DNA

<213> B.fragilis

<400> 3547

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caaccggata	atttggaat	tcttcccgat	tacacaaaaa	catctatttt	catcccgga	180
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<210> 3548

<211> 1599

<212> DNA

<213> B.fragilis

<400> 3548

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<210> 3549

<211> 210

<212> DNA

<213> B.fragilis

<400> 3549

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attataatat	tattattaag	tataaaagtt	gggataccgc	ttgtcgattt	ctgttttcat	180
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<210> 3550

<211> 1845

<212> DNA

<213> B.fragilis

<400> 3550

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<210> 3551

<211> 315

<212> DNA

<213> B.fragilis

<400> 3551

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attcgtggtg	aaatattcgt	tatgaatgat	aatgatgaat	taggaggact	gatagataat	180
gatgtcccg	ttacgggtcat	tggtcatgta	tgcaccgaag	aatgtaatac	aacatgctta	240
cattaccgtc	aagggtacgtg	tccctgtaaa	atcatgaaag	atacttttgg	taaagtaatt	300
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<210> 3552

<211> 576

<212> DNA

<213> B.fragilis

<400> 3552

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tatggacttt	gcctgaaata	cctgcatgat	gaagaccggg	cacaggaagc	agtcatgcaa	180
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<210> 3553

<211> 324

<212> DNA

<213> B.fragilis

<400> 3553

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<210> 3554

<211> 1734

<212> DNA

<213> B.fragilis

<400> 3554

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<210> 3555

<211> 195

<212> DNA

<213> B.fragilis

<400> 3555

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aaaaagaatg	cccaaccgga	ggccgaacag	gaagaaaacc	gggtcattga	aggggtcaaag	180
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<210> 3556

<211> 486

<212> DNA

<213> B.fragilis

<400> 3556

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<210> 3557

<211> 1203
 <212> DNA
 <213> B.fragilis

<400> 3557

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<210> 3558
 <211> 324
 <212> DNA
 <213> B.fragilis

<400> 3558

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 <211> 1839
 <212> DNA
 <213> B.fragilis

<400> 3559

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<211> 1353

<212> DNA

<213> B.fragilis

<400> 3560

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<210> 3561

<211> 207

<212> DNA

<213> B.fragilis

<400> 3561

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<210> 3562
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 <212> DNA
 <213> B.fragilis

<400> 3562
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<210> 3563
 <211> 258
 <212> DNA
 <213> B.fragilis

<400> 3563
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 aagaaggatg cctactgtaa caaaaaacct gataattatc aatgttctcc tgttcctcgc 180
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<210> 3564
 <211> 1827
 <212> DNA
 <213> B.fragilis

<400> 3564
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<210> 3565

<211> 465

<212> DNA

<213> B.fragilis

<400> 3565

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<210> 3566

<211> 3036

<212> DNA

<213> B.fragilis

<400> 3566

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<211> 249

<212> DNA

<213> B.fragilis

<400> 3567

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<210> 3568

<211> 1482

<212> DNA

<213> B.fragilis

<400> 3568

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<211> 381

<212> DNA

<213> B.fragilis

<400> 3569

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<211> 1005

<212> DNA

<213> B.fragilis

<400> 3570

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<211> 3012

<212> DNA

<213> B.fragilis

<400> 3571

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<210> 3572

<211> 2406

<212> DNA

<213> B.fragilis

<400> 3572

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<212> DNA

<213> B.fragilis

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<212> DNA

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<211> 1311

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<211> 1236

<212> DNA

<213> B.fragilis

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gtttgtaaag	aatgtttgtg	taaatatctt	tgtccttcac	cctctaacta	tgaattagca	1200
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<210> 3577

<211> 381

<212> DNA

<213> B.fragilis

<400> 3577

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tcagaaagat	taatcacagg	tactcctgac	ctggatatag	gctcttgctt	cttattggaa	180
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ttagaacaaa	catatttttc	catcatagga	acctactcta	ttatttttaa	gttgcaatca	300
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tggattcatc tattacagta g

381

<210> 3578

<211> 1200

<212> DNA

<213> B.fragilis

<400> 3578

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gtaaataaat	gcctgaaact	ttttgatcga	tctaccggta	aatttattcg	ggatataggt	300
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gatttagctg	gtaattataa	agatagaatt	tgtatagatg	ataatgtacg	ctataatttg	480
cagcaaagct	atctatatgt	tacttatggg	aaactatggg	gacataataa	acttgatatt	540
tccaagtca	ccttgtttttg	tatagacgaa	aactctaatac	acattacaga	tatagtaggt	600
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ggagtaaagt	ctgatggctg	ttttatagct	ctgctgcaac	ctgatgagtt	gtgtgatgaa	1140
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<210> 3579

<211> 1287

<212> DNA

<213> B.fragilis

<400> 3579

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aatcctgttg	ttcgggataa	tattattcat	ttgtcaactg	cgataaagaa	tgttcgagag	180
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aaactattgtt	ttgattggaa	tgggcagttc	ttgttccgta	ttgggagcca	gggtcaaggg	360
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gtggctccac	aaatactgaa	cctgatgaaa	cgtgtgcgag	aagatgataa	cccgatattg	1260
ataatagcta	atttgaaaac	aaaatga				1287

<210> 3580

<211> 1686
 <212> DNA
 <213> B.fragilis

<400> 3580

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<210> 3581
 <211> 687
 <212> DNA
 <213> B.fragilis

<400> 3581

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ttacttcagg	aaggagtaca	atacatataa	tacgtgaccg	aactgtcgca	atataccagt	360
gtaaacatcg	gtacgggtat	catccctatg	agtgaatacc	tgaacatgat	gactacagtg	420
ggagcttcgg	gagccgtgta	cgccatcttg	ctggctttcg	gaatgctgtt	ccccaccag	480
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gccctgatag	aactgtatgc	agggttttgc	aataatccgg	gcgacaacgt	ggcgcaattc	600
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agaaacaatg	ggacatatta	taactga				687

<210> 3582
 <211> 930
 <212> DNA
 <213> B.fragilis

<400> 3582

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aatacccgtc	agaacgatta	cgattacaac	gccccgaaga	aggcacaatc	ggacgagata	840
gaccggattc	tgcacaagct	gaagaagtcg	ggatacgaga	gtctgacaac	agaagaaaaa	900
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<210> 3583

<211> 234

<212> DNA

<213> B.fragilis

<400> 3583

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tccgataaag	ttgtcgtagt	cgtaagactt	cctaacttcg	cctgtatcaa	ttcatcggca	180
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<210> 3584

<211> 1470

<212> DNA

<213> B.fragilis

<400> 3584

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tctatcagtt	cggatgatgg	tagttttggt	attagcaatg	gaattcgtac	gaataaccgc	180
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1470

<210> 3585

<211> 570

<212> DNA

<213> B.fragilis

<400> 3585

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aagtctaaac	aatgtaccga	ttgcgggttc	gtttattatt	tcaaccgctc	atcggttaca	180
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gcgaaaggga	cgctggacct	tccgggtggc	ttcatcgaca	tgaacgaaac	gggtgaagaa	300
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<210> 3586

<211> 621

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (596), (597), (598), (601), (602), (603), (604), (612), (613)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3586

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gcttatctga	cccgttggtc	ttcaccacgg	ggctggcgag	aagcgcgtcg	aggccnnngg	600
nnnntctatg	gnncctcccc	g				621

<210> 3587

<211> 234

<212> DNA

<213> B.fragilis

<400> 3587

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aagactgttc	ttttcctgtg	gatagctgaa	cgtgccatta	ttattcgaaa	cggccaggcc	180
ataaggcata	ttttccttat	ttaccatata	gtaggatttg	taatcgatgt	ctga	234

<210> 3588

<211> 300

<212> DNA

<213> B.fragilis

<400> 3588

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gttacaaaag	ctttgtcggc	tggtgacaaa	atttccttgg	ttggatttgg	tacattctct	180
gtagctgaaa	gatcagcaag	aatgggaatc	aatccttcta	ccaagaaggc	aattgagatt	240
cctgcaaaga	aagttgctaa	atttaaaccg	ggtgctgagc	tgacagatgc	tataaaataa	300

<210> 3589

<211> 1281

<212> DNA

<213> B.fragilis

<400> 3589

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<210> 3590

<211> 303

<212> DNA

<213> B.fragilis

<400> 3590

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<210> 3591

<211> 324

<212> DNA

<213> B.fragilis

<400> 3591

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324

<210> 3592

<211> 210

<212> DNA

<213> B.fragilis

<400> 3592

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<210> 3593

<211> 3069

<212> DNA

<213> B.fragilis

<400> 3593

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<210> 3594

<211> 702

<212> DNA

<213> B.fragilis

<400> 3594

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<210> 3595

<211> 765

<212> DNA

<213> B.fragilis

<400> 3595

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<210> 3596

<211> 285

<212> DNA

<213> B.fragilis

<400> 3596

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<210> 3597

<211> 1884

<212> DNA

<213> B.fragilis

<400> 3597

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<210> 3598

<211> 924

<212> DNA

<213> B.fragilis

<400> 3598

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<210> 3599

<211> 777

<212> DNA

<213> B.fragilis

<400> 3599

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<210> 3600

<211> 474

<212> DNA

<213> B.fragilis

<400> 3600

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<210> 3601

<211> 1902

<212> DNA

<213> B.fragilis

<400> 3601

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<210> 3602

<211> 330

<212> DNA

<213> B.fragilis

<400> 3602

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agggttcgggt	atgcctttta	ctttcgaact	gcccacggga	tggagcgtcc	ctttttttcc	120
cggccccatt	ttgatgcgga	gatgaataca	atgagtttgg	cctttgaacc	ggacttcaag	180
gcaattttct	tcccgaagat	tgatatttgag	ggaaagattc	ccctgtttta	aagggcccg	240
aaacccttaa	aggataaaat	tttttctccc	aaagttccca	aatcccagga	taaatttttt	300
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<210> 3603

<211> 249

<212> DNA

<213> B.fragilis

<400> 3603

tttcaacagt	ttgtgggtct	ctttctcgag	gaagaagtat	tgttgaccg	gcatttttga	60
gcattggaac	aagaaatgga	agtacataac	tctgagtata	aaggctctct	acagtctgaa	120
agattcgtgc	acgttgccat	tcccagcgag	ccaatttgga	ttcgtaataa	aagccgtgac	180
tttgccatag	agcaatgtga	cggtttttga	atccgtttgt	gggggtataa	ggaacagata	240
atcgggtaa						249

<210> 3604

<211> 414

<212> DNA

<213> B.fragilis

<400> 3604

ccattaatta	ctaattatat	gtcgaaaatg	aattcaatgc	ttatgggaat	atgttttctt	60
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gagtttgctt	ctctgattga	agatgcaagt	gtgcaacggc	tggatgtccg	taccatggct	180
gaatatccgg	aaggccacat	tccggggacg	atcaatatca	atgtgctcga	tgattcgttt	240
gcggatatag	cagactccac	acttcaaaaa	gataaacggg	tggctttata	ttgccgcagt	300

ggcaagcgaa gcaagaagggc ggctgccatt ctcagtgaga aaggatataa agtgtacgaa 360
 ttggataaag gattcaatgc ctggcaggaa gcaggcgaga aagtggagaa ataa 414

<210> 3605

<211> 924

<212> DNA

<213> B.fragilis

<400> 3605

actggggcta	ctgaaataaa	aatgtggaaa	gacttctttt	acttcacacg	tgcagaacgg	60
caaggatatcc	tgataacttgc	cgttttgtgt	attctcgtat	ttgtggccgg	atggttgatc	120
cctgtcaaag	agaacacggc	aaaaaacaat	acggaaaagt	ttaaaaagga	atatgccggt	180
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gaaatgctcc	taccttatat	tcatatagct	acgctcgcaa	agcccaaaga	tacacttcgc	480
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aaaagtctga	agcaactttc	tctctacgaa	gagtttacgc	ctcaagatct	ggagcgaatc	900
agccactaca	tctgttttga	gtaa				924

<210> 3606

<211> 1176

<212> DNA

<213> B.fragilis

<400> 3606

ataaaaaaca	caatgaatca	aacagtcaac	aaacgcctac	tcgctcttga	tgtattgcga	60
ggcattacta	tcgcagggtat	gattatggtc	aacaaccccg	gcagctggag	ttatgtatat	120
gctccccctg	ggcatgcggc	atggatcggc	ttaaccccg	ccgatctggg	atttcctttc	180
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agccactcgg	ccgctttgaa	aatccttaaa	agaaccatcg	taatctttgc	cattggtttg	300
ggaatcgcat	ggttctccat	gttttgccgt	acctggaatt	cactctccgg	tgaagatatt	360
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gtcatgcagc	gattggcgct	ttgctacggg	gcaacagcca	tcacgcgttt	aattatgaag	480
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tatcccggtt	ctctggcatt	cgcaatcttg	ttcgtagggg	tgaactgggtg	tatcggatat	1140
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<210> 3607

<211> 714

<212> DNA

<213> B.fragilis

<400> 3607

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gcaacactcg	caatgatgat	ttcttttaaat	gcacttgcac	aagaaaaagc	gacaggtaag	120
gcttataaag	ctattcagaa	agatgaaaaa	gtaatcaaca	aagatttgca	gaaaaaagcc	180
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ggaaagttac	cgttggacaa	acaactggag	aattcatggg	aaaaacagat	ggaaattgat	300
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gctgcagcta	tgcaggctac	caacacggcc	aagattgata	tcgccggaca	ggttcagaca	420
aaggttacac	agttgatcga	atcgaaagta	gccaatgacg	atatggggca	ggaggaagct	480
gccagtctgt	cgagcgcagt	agctgccggg	aagagtatta	tcagtggaac	gctgggacgt	540
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accatcgggt	atagcctgga	agctgcaaac	aaagtagctg	tcaaagcact	tagcgaagaa	660
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<210> 3608

<211> 1200

<212> DNA

<213> B.fragilis

<400> 3608

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ctgattgccg	atccggcctt	tcagaagggt	gttgccgggg	tgataccgga	tgtacccttt	180
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acggctattc	cggacaagag	caaagcatac	acctacatct	cgaatcaccc	tgacatcatt	360
cttgattccg	gtttctttatc	tgtattgtta	gtcgaccagg	ggatggatac	ggtggagatt	420
gccattggcg	ataatctgct	gatttatccg	tggatcaaga	agtttgtccg	ggtcaataaa	480
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tcccgttata	tgcactatgc	aatcggagaa	aagaatcagt	ccatttggat	tgcaaacgt	600
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tatgtggaaa	agcagcttga	aaagatagag	attcccaaca	aagatatttc	tttcttgctg	1140
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<210> 3609

<211> 888

<212> DNA

<213> B.fragilis

<400> 3609

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tggactctt	tctttttacc	tttggcagg	atcataacgt	atagccgctg	gcgatataaa	360
tggattttga	gtttcagttt	tattctttcg	ctggtgttcg	tctgtatcaa	tctgtttaag	420
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cttgtcggac ttctcatttg cttcgtatta ctgcagatgt gctggtatgg cattaattat 840
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<210> 3610

<211> 216

<212> DNA

<213> B.fragilis

<400> 3610

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 cctactaata gctgcatgct gactatccac caacgtttgg tttttaataa gtcgacaaat 180
 ggactccaga aaggtttgat aacccatggt aaatag 216

<210> 3611

<211> 792

<212> DNA

<213> B.fragilis

<400> 3611

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 aaccatgcac cggccagtga gacctgttct gtacgctcta ctccggagac agacgaaata 180
 gaccaactgt tcgatgatat gcagctggac gggattgtca gctatacagc tttccgacag 240
 gcagtgaccg gctatcggaa aatcgagcag aaaagcaagt ccatcatgac cctgatcgat 300
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 cctgcccaatt ga 792

<210> 3612

<211> 930

<212> DNA

<213> B.fragilis

<400> 3612

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 aaacagatag actgggacga gattcacacc cggatatcaa agcttatcac cccgaatatg 240
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 cgcaacttcc gtgcagacct gctggaagat tcctatctgg gacgcgccag tacggattat 420
 cgcacggcag caggccttaa atacaagata ctgaaagata atatcggcta catacgggtac 480
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 ggagtacgct ggcaaaagaa ggtagtagtg ttaaccaatc gccgctcttt cagtgcgacc 780
 aatgactttt tcaaccacat gcgttgctcg gccaatgtca ccaccatcgg agaccaaaac 840
 cgggagagtt cgggtatgcc ttttactttc gaactgcca acggatggag cgtccctttt 900
 tttcccggcc ccattttgat gcggagatga 930

<210> 3613

<211> 240
 <212> DNA
 <213> B.fragilis

<400> 3613
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 attttatata atttagattt atatttgtat attcacatta tgacgcttct ctgtttttata 180
 aaaatgatct gtgaatacat ttataagcga tggttcttaa ggtttagaaa catttttttag 240

<210> 3614
 <211> 1113
 <212> DNA
 <213> B.fragilis

<400> 3614
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 tgccgaaaag gcatattcat tctaacaag acaattatga agaaatttac ttgcgtacaa 180
 gacatcgggc acctgaaatc agcccttgcc gaatcattcg agatcaagaa agaccggttc 240
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<210> 3615
 <211> 627
 <212> DNA
 <213> B.fragilis

<400> 3615
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 gcttgtaaaa gttaaataaa gaaagatatg gaatatgtaa aaggctggca cggcaaaaaa 180
 ataagtttac cttcggaaag tgattttttg ttatttgagg gagactcagt ggtctatgac 240
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 aataaaaatc cagataatga ttctcatggt tggttgttgg attctaaca taggattatt 540
 tatattggag atccaactgt taatcaaaaag ataaataaag aatatatgga gttagtgaga 600
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<210> 3616
 <211> 420
 <212> DNA
 <213> B.fragilis

<400> 3616
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 aagaaaatta aaatgaaagt agaaactcag caccatcaac gttctctgcc cccaccttgt 180
 cccgcagaag cttttatctg cggaaatcag gttgatctta ttttcagaga aacaaataaa 240
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<210> 3617
 <211> 894
 <212> DNA
 <213> B.fragilis

<400> 3617
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 gaagaagatt ccagaattgt attcaatagt gcaaaagagt tttataacac ccttgatata 180
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 tatgggcaag taggagttaa ccaagaggaa tcagaagtaa caacaagaac tgtatatgaa 480
 acaaaatatg gaaagattgg aacatcatat caatatgaat tcaagattcc agaaggtaaa 540
 tccaaatata aatatgtaca tgaacttaaa tccgttatta ttaaagagaa cctcccacca 600
 tataaatcat ggagtaattt atttttagtt ttaaaattag aatggaaaag taaaaagaaa 660
 tggaaagtgt cagaaaaaga agaaagaaat atctcaatag atttaaatgt gtgtaaacgc 720
 aatttagcaa aagtaaagta taaccaagaa atccggatag atgttcaaaa tatggattct 780
 aaatcacact ctataaatat agaaggttat atcatccatg aagtagttgg aataccaagt 840
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<210> 3618
 <211> 768
 <212> DNA
 <213> B.fragilis

<400> 3618
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 gcgggaaacc tggtgaaagt agaagatatt cgtgctcccc gtgcttttgc cactcctcat 360
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 gatacagcct tgctggagca caatcaggtt caattggcag aatatctggg agtgacgcgt 660
 ccggcactct cgaaggagat aaataagatg atgaaagagg ggctgatttc gatcaataag 720
 aaagtagtga cgttggaaga tatggcggca ctcaaagaat atatctga 768

<210> 3619
 <211> 1371
 <212> DNA
 <213> B.fragilis

<400> 3619
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<210> 3620

<211> 1332

<212> DNA

<213> B.fragilis

<400> 3620

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<210> 3621

<211> 864

<212> DNA

<213> B.fragilis

<400> 3621

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<210> 3622

<211> 1380

<212> DNA

<213> B.fragilis

<400> 3622

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<210> 3623

<211> 3366

<212> DNA

<213> B.fragilis

<400> 3623

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<210> 3624

<211> 528

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (388), (394), (426), (439)

<223> Identity of nucleotide sequences at the above locations are unknown.

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<210> 3625

<211> 2682

<212> DNA

<213> B.fragilis

<400> 3625

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<211> 336

<212> DNA

<213> B.fragilis

<400> 3626

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<211> 2520

<212> DNA

<213> B.fragilis

<400> 3627

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<210> 3628

<211> 894

<212> DNA

<213> B.fragilis

<400> 3628

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aactacggat	tgcattatca	gttcgcgatt	acagacaact	ttaagttgct	tgccggagga	420
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ggaattaaga	cacacacgta	ttcgcaagta	ttcatgggtg	gatttgtaca	cgacctgttc	840
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<210> 3629

<211> 2109

<212> DNA

<213> B.fragilis

<400> 3629

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gcagactga						2109

<210> 3630

<211> 270

<212> DNA

<213> B.fragilis

<400> 3630

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ccatcggggc	atgcgaagcc	cagccaagag	gacaaacgcc	tgacgggcgc	catacaaaaa	180
gcgtcgcaaa	cgatgaacat	caccttggtg	gatcatgtca	ttgtctgcga	cggttgcttt	240
tatagttttg	ctgacgaagg	gcttatctga				270

<210> 3631

<211> 426

<212> DNA

<213> B.fragilis

<400> 3631

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ggttcggggc	atacgaaga	gagtgcggtt	gaactgatga	gaagaatact	tgccacttgc	180
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ctgcaggaaa	gcaaagaacg	ggaacagatc	agatgttcag	aggacatcta	caagctgttc	360
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tgttaa						426

<210> 3632

<211> 555

<212> DNA

<213> B.fragilis

<400> 3632

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ccggagataa	atccgaagtt	acggatttat	tataaaaaga	agatctcgaa	tgatacaggt	240
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gaaacatttg	accagaactt	tacgggagct	gatccggggc	cttttgattc	acctactaaa	360
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cgtatgcgtg	tcggagaaa	atggcttggt	tatatctccg	gggagttggc	ttacggagca	480
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<210> 3633

<211> 861
 <212> DNA
 <213> B.fragilis

<400> 3633
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 gaagacatca ataaggaaga ccagaaagta gctattgccc tacagaaagc aattcctcaa 180
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 caactcagca accggaagct cgtagaccgt ggtactcgta tgattattga agaactcggg 780
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<210> 3634
 <211> 798
 <212> DNA
 <213> B.fragilis

<400> 3634
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 gacatcacat tgaagcaggc ggaagagagg gctttcatgg aagcgaagaa agctgctctg 180
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 aatgttacta ataaaaaagt tgaagagggt tgggacacgg atacccttag cctgtataag 360
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 gaggtgaaag gagggtgaaac actctatcgt gaaggggatg tgtttcactg taagctgact 480
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 cttttacctt acagttatga accgaatata ttgttgaaag ccggtaaaga atatgcgatt 600
 ccttttagta atgctgtcga ctatcgtatg gagaagcagc atggtaagga aagcgagaag 660
 ataaaatgta tgatggtggc taccaaggaa gatatccat ttaccaaaga agtcacttat 720
 cagaatgtat tggagtgggt gtactctatc ccggcgggtt agcgttgtgc tttttatgat 780
 atggtattga taaaataa 798

<210> 3635
 <211> 231
 <212> DNA
 <213> B.fragilis

<400> 3635
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 ttggctacag gagagtcgtt ccccgatgga gatatagcct gtatcggatga cggatctgtg 180
 gactgtccgt tcacatatct gaaagttgaa gtagtatacc gtgaagaata a 231

<210> 3636
 <211> 1215
 <212> DNA
 <213> B.fragilis

<400> 3636

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gg	tttgaag	attcattcct	gaaattgact	ttgccgaatg	gtgaaaagaa	aattttggag	180
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gcct	gcaatg	atctggcacc	tctccacaat	cctgctaacc	tgaaaggagt	tgacgccatt	420
acag	ctattc	tgccgaatgt	tccgcaaate	gggtgattcg	atactgcatt	ccaccagact	480
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cgcc	gttatg	gtttccacgg	aactttctac	cgttatgttt	ctcagcgcgt	atgcgaatac	600
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<210> 3637

<211> 1473

<212> DNA

<213> B.fragilis

<400> 3637

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tcacc	cagct	tcgatccact	accaggatgc	gaactacttt	atgtagacaa	gcttaccaac	180
agcgc	cctcca	tgtacgccat	tgtacacctat	tccgatgcaa	gctacacatt	actttatacc	240
aaata	tacat	cacttgaact	gggactat	tttgaac	ggatgattca	cattgccgaa	300
gattc	cggtc	ccggcatgggt	atacgcgcgac	cattatcaag	tgacagaagg	taaacagagt	360
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atcg	taaaga	tgaatgctca	caacctttac	aaggaccgca	tacgcacttg	ggaattacag	1440
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<210> 3638

<211> 702

<212> DNA

<213> B.fragilis

<400> 3638
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 gccggctgca tctagggcgt tatttcagtc gtactgatag ctaagcttat gggagcctca 360
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 caaggacttt cgatgggtac ggccgctcat gccgtcggca cctcaacagc catggatctc 600
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<210> 3639

<211> 1026

<212> DNA

<213> B.fragilis

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<210> 3640

<211> 1413

<212> DNA

<213> B.fragilis

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<210> 3641

<211> 729

<212> DNA

<213> B.fragilis

<400> 3641

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<210> 3642

<211> 186

<212> DNA

<213> B.fragilis

<400> 3642

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gtgggtgccca	gagacgggct	gtactctata	agtgcctttac	ggggctcgtt	taccgggact	180
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<210> 3643

<211> 1488

<212> DNA

<213> B.fragilis

<400> 3643

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<210> 3644

<211> 972

<212> DNA

<213> B.fragilis

<400> 3644

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<210> 3645

<211> 867

<212> DNA

<213> B.fragilis

<400> 3645

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867

<210> 3646
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<212> DNA
<213> B.fragilis

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aagaatgaag ataccgattc agacagcgta aattcacttc cggaacttga gctatcttat 180
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<210> 3647
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<212> DNA
<213> B.fragilis

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<210> 3648
<211> 2910
<212> DNA

<213> B.fragilis

<400> 3648

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<210> 3649

<211> 1158

<212> DNA

<213> B.fragilis

<400> 3649

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<210> 3650

<211> 1803

<212> DNA

<213> B.fragilis

<400> 3650

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<210> 3651
 <211> 1026
 <212> DNA
 <213> B.fragilis

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 <212> DNA
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<210> 3653
 <211> 987
 <212> DNA
 <213> B.fragilis

<400> 3653
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<211> 516

<212> DNA

<213> B.fragilis

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<210> 3655

<211> 1353

<212> DNA

<213> B.fragilis

<400> 3655

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<210> 3656

<211> 1461

<212> DNA

<213> B.fragilis

<400> 3656

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<211> 579

<212> DNA

<213> B.fragilis

<400> 3657

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<211> 1413

<212> DNA

<213> B.fragilis

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<210> 3659

<211> 1131

<212> DNA

<213> B.fragilis

<400> 3659

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<210> 3660

<211> 1242

<212> DNA

<213> B.fragilis

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<210> 3661

<211> 528

<212> DNA

<213> B.fragilis

<400> 3661

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<210> 3662

<211> 894

<212> DNA

<213> B.fragilis

<400> 3662

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<210> 3663

<211> 345

<212> DNA

<213> B.fragilis

<400> 3663

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<210> 3664

<211> 1566

<212> DNA

<213> B.fragilis

<400> 3664

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<210> 3665

<211> 312

<212> DNA

<213> B.fragilis

<400> 3665

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aatattgagt	cattggctca	gaatgaagga	aatagtgtac	atggaaatat	tgatacgact	180
ctggaacctt	attattatca	aagttctaga	gattattggt	taccggggat	gaatggtaca	240
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<210> 3666

<211> 1275

<212> DNA

<213> B.fragilis

<400> 3666

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<210> 3667

<211> 258

<212> DNA

<213> B.fragilis

<400> 3667

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tctatcctga aagacggagg tgggctcgca gctttggcac cttactacat cggacaggaa 180
atagctgtcc tcgtcaatga agacgattat gaaaatgcaa tggaaatagt gagaaaccgc 240
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<210> 3668

<211> 1131

<212> DNA

<213> B.fragilis

<400> 3668

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<210> 3669
 <211> 858
 <212> DNA
 <213> B.fragilis

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<210> 3670
 <211> 1800
 <212> DNA
 <213> B.fragilis

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<210> 3671
 <211> 1314
 <212> DNA
 <213> B.fragilis

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<210> 3672
 <211> 1260
 <212> DNA
 <213> B.fragilis

<400> 3672
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<210> 3673
 <211> 555

<212> DNA
<213> B.fragilis

<400> 3673
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 ttggtcaatg ccacgccttg gcatctcaag gataaccccg attacgatgc caacgaccca 480
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 acaccggatg cctaa 555

<210> 3674
<211> 609
<212> DNA
<213> B.fragilis

<400> 3674
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<210> 3675
<211> 1929
<212> DNA
<213> B.fragilis

<400> 3675
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<210> 3676

<211> 654

<212> DNA

<213> B.fragilis

<400> 3676

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<210> 3677

<211> 3084

<212> DNA

<213> B.fragilis

<400> 3677

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<210> 3678

<211> 264

<212> DNA

<213> B.fragilis

<400> 3678

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gtgtatttgc	atgtggctca	gttgataaat	gtcagactgt	tattgataaa	atttatagat	180
gaaactggag	gtagaaaaat	tatatcttat	ttgcaatcaa	ctcttttttt	gattttcttt	240
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<210> 3679

<211> 1029

<212> DNA

<213> B.fragilis

<400> 3679

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ctgtttagta	catttgattcc	tgccgaaccc	tggctattcg	gttattacgc	caaaacaggc	360
tatactcccg	ctttccgtat	ctccacaaa	gtcttctcac	tttcagagtt	gaccattggg	420
ccggaaccgg	atacatgat	tgaagaaacg	acggaatatc	aagaagatta	ttatcaatac	480
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<210> 3680

<211> 318

<212> DNA

<213> B.fragilis

<400> 3680

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gaagatactt	ggagtacaaa	aagaggttat	aaatattttt	gcgatagtaa	aactgataaa	240
aatacaatct	atccatgtcc	atcttcaatg	gagtcctgggt	ggtatgatga	taataagcag	300
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<210> 3681

<211> 942

<212> DNA

<213> B.fragilis

<400> 3681

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<210> 3682

<211> 750

<212> DNA

<213> B.fragilis

<400> 3682

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<210> 3683

<211> 495

<212> DNA

<213> B.fragilis

<400> 3683

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<210> 3684

<211> 192

<212> DNA

<213> B.fragilis

<400> 3684

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gtatattgta	atacttcac	ctctccaata	cgtttgaaga	ttcggggtaa	tgcatgtgat	180
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<211> 972

<212> DNA

<213> B.fragilis

<400> 3685

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 <213> B.fragilis

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<400> 3689

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<210> 3690

<211> 507

<212> DNA

<213> B.fragilis

<400> 3690

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<210> 3691

<211> 1344

<212> DNA

<213> B.fragilis

<400> 3691

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<210> 3692

<211> 1215

<212> DNA

<213> B.fragilis

<400> 3692

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<210> 3693

<211> 1485

<212> DNA

<213> B.fragilis

<400> 3693

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<210> 3694

<211> 567

<212> DNA

<213> B.fragilis

<400> 3694

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<211> 1566

<212> DNA

<213> B.fragilis

<400> 3695

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<210> 3696

<211> 1074

<212> DNA

<213> B.fragilis

<400> 3696

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<210> 3697

<211> 591

<212> DNA

<213> B.fragilis

<400> 3697

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<210> 3698

<211> 783

<212> DNA

<213> B.fragilis

<400> 3698

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atgttgagtg	ctacggcgcg	aatacttatc	ttgggggact	ggatcaactt	cttctcttat	720
gctgtgttcg	atgggtgagaa	cctgtttctt	gagaactata	ttgaaggaga	aacccaactt	780
taa						783

<210> 3699

<211> 372

<212> DNA

<213> B.fragilis

<400> 3699

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ctggctcgca	ggagactgac	ggctctgttc	ccctctatcc	gttttacggg	tgagcaggag	120
acaaggccgt	tattctttcg	taaccgggca	ctattctcta	accaaagggc	ccgtttctat	180
accgatgcag	atgctgaacg	ggtagtgaag	gagttgaaaa	caatcgaaag	agaggccggc	240
agggagcagg	aagataaaaa	gaaagaaaag	gtatgcctgg	atattgatct	gcttggtttt	300

gatgaccgga tcttgaggcc ggaagatctg caaagagaat atgttcgcaa aggacttgaa 360
gaattgaagt ag 372

<210> 3700

<211> 1011

<212> DNA

<213> B.fragilis

<400> 3700

ggcttttcat	ccggacttgt	tgcccgatta	tacgcctgtc	tattacgaac	gactcaatta	60
atctgtccga	tgaacgacc	gacaatacct	cttatgctgc	ttatagccgc	atctattttt	120
gtcttttttc	tgctgaatct	gttggtgggc	tcggtttcca	ttcccatcgg	ttcggtagtg	180
aacatacttt	ggggcggaac	ggatgaatcc	gttatctggc	aaaatatcat	ctggaagtca	240
cgggtaccgc	aggctttgac	cgctttgggtg	gcagggtgcg	gactttctat	cagtggcttg	300
cagatgcaga	ccatatttcg	taatccgctg	gcaggacctt	ctgtacttgg	tatcagttcc	360
ggtgccagcc	tgggagtggc	tttcgtggta	ttgttgctcg	gagcatttgg	aggcgtggca	420
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ctgtcgggtga	tggcacttat	tgtgtatgta	tcccaaaaag	tgaaggaaa	tgtaaactttg	540
ttgattatcg	gtgtgatgat	tggctatgtg	gcgagtgcg	ttatcgggtg	actcaaatat	600
tttagtgtgg	aagaagacat	ccgcgcctac	gtcatttggg	ggttgggtag	ctttgcccg	660
gtctccgggtg	atcagatgac	cttggttcgtc	tgtatcatgg	ttgtgctgat	tccgctctct	720
ttcctgttga	ttaaaacat	gaatctgatg	ctgcttggcg	atgggtatgc	acgtaacttg	780
ggattgaaca	tcaggcgtgc	ccgcctgggt	ggtcatttca	tggtcgggag	tgcttgtagc	840
catcgtgacc	gcttattgcg	gaccgattat	gttcattggg	ttggcgggtc	ctcatctttg	900
ccgtgccatc	tttcatacct	cggatcacccg	catcctgatg	ccggccactt	tgctggcagg	960
tgcttcggtg	gctttggtat	gcaatctggg	tgcccgcatg	ccgggctttg	a	1011

<210> 3701

<211> 213

<212> DNA

<213> B.fragilis

<400> 3701

ttggcaacac	catcggcagt	ccgcacgaca	aagaatgttt	tatccgcggg	tttcggattg	60
acgatgattt	caaaatcagc	cgcaactgta	gggggatttt	ttttggcaga	tatgatgtta	120
gtgggtgtaa	ataccccgct	gacactgata	aaagttgctg	catccacatt	ggatgtaccc	180
gaaatatact	ggaatgcatt	ttccgtagca	taa			213

<210> 3702

<211> 1053

<212> DNA

<213> B.fragilis

<400> 3702

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atagatgcaa	tgaanaatata	cttaccocaag	gggaataatc	ttgcaaatgc	gctgatggat	180
attctttacc	ttggcaaaga	agctacttac	aggcggttgc	ggggtgaagt	accgttcaact	240
tttgccgaag	ttgccaccat	atctcaaacac	atgggcatct	ctcttgataa	aatagtaggg	300
gccgatttga	atgacaacgc	tattgttaat	ctgaatatgt	tgcaatgcca	acgccctgcg	360
gagacctatt	attctattat	cgattcgtat	ataaagttgt	tcggtcaatt	gattgaacgg	420
gaaagttcgg	aaagaagcac	ctcttcaaat	accgtttccac	aaaccctgta	tttaaagtat	480
gaagccttat	ccaaattcca	acttttcaaa	tggattttacc	agcatgaaag	tacatatgca	540
ggcagacatt	atgaagattt	ggagattcca	gaaaaattga	ttgacaagca	aaaagaattt	600
gtaaatctgt	ctcagctatt	ccagtcaacc	aattatatat	gggataaaga	gatattttatc	660
agatttggtca	atgaggtcaa	gtttttctta	aatatcaatc	tgatatcaga	agacagtgtg	720
aaaagaataa	aaaaggaatt	attgatattg	ctgaatgaat	tggaaaaaat	ttcagctcag	780
ggaaaaatatt	catccggaaa	agatgtgaaa	atatatatat	ccgatatcaa	ttttgagtct	840
acatatagtt	atgtagaaac	agatattttac	catcaatgcc	tgataggggt	cttttccatt	900

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aattccataa cttcgaaaga tgattttcta tttcagcact tgaagctatg gatacagtca 960
ttaaagaagt attcaacttt gatttcgcag agtgggtgagg ttcagcgaat ccatttcttt 1020
aaccggcaac aagaactggt gaaaagttta tga 1053

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<210> 3703
<211> 210
<212> DNA
<213> B.fragilis

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<400> 3703
gctacggaac catccttcat tgcgagtgc aaggtagtgc tttttctgaa atctccaaaa 60
aaatctgtgt ctttttttac ttacattttc acgtatatat tctataatcc taaaggtaag 120
ctagttaagt accaaataaa aagtaacatt gtccagccta tcagtatata taccgaatat 180
cgccaagtgt attttaagag tgaaccataa 210

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<210> 3704
<211> 598
<212> DNA
<213> B.fragilis

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<220>
<221> unsure
<222> (22), (31)
<223> Identity of nucleotide sequences at the above locations are unknown.

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<400> 3704
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ttatcggcat caatacgggt atctcaccgc gggtataatg ttgactgcat tgggcaccac 180
ggaggatata gtgaaagggc tcgattcggg ggcggatgac tatttggtga aaccattcag 240
ctttcaggaa ctggaggcgc gcatcaaggc catcctgcgc agagggcggg aagactctgt 300
ccagcagctg gtatgtgatg atctgggtgct taactgcaac acccgccgtg ccagacgcaa 360
ggagggtggag atagaactca ctgttaagga gtaccgcttg ctggagtatt tcatgacca 420
tcaaggcatg gtgctttcgc gcctgacatt attgaaagat gtatgggata agaatttcga 480
tacgaatacc aatgtggtag atgtttatgt gaactatctt cgtggtaaaa tagataagga 540
gcatgacaag aaattgattc atacggtggt aggttcggga tatatcatgt atgcttaa 598

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<210> 3705
<211> 273
<212> DNA
<213> B.fragilis

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<400> 3705
agaaataagt tcttatctga agtcatagag attctgcggg gtctgttcaa aatcattttg 60
ccggaatcgg tgccacaagg cctgtctcta tttctaaaag aatccacaat tcagcctatc 120
gatccccatg ccggaaattt ggcttccaac caacagatgt gtttaaatat aggacgaaaa 180
gaatgttttt gctcacgttc tttgtcatct gaaagatttt ccataacttg caacttttat 240
cggttaagct tgtacgatgt cccattatgt taa 273

```

```

<210> 3706
<211> 183
<212> DNA
<213> B.fragilis

```

```

<400> 3706
acaacaacca cccggtttga gataggcaac tatttgttcg actctcttgc acaaactg 60
acacatgccg gattgaaaca tgagctatct catcgggagt cggagatcct gagagcgact 120
ttgcgaaaat cagaatcaag tggccaacac acagaatgta ttactcgacc tatggggaga 180
tga 183

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<210> 3707
 <211> 711
 <212> DNA
 <213> B.fragilis

<400> 3707
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 attacgttga aaggactcaa agcactgcaa ggagccgact gcattctctg tccggccacc 120
 atgactcaag acggcaagtc ctcttcacgg gcactctcca tctgaacac tctcggattc 180
 tcggacaccg tacagtgttt ccggcttcct atggacaagg acaggacact ggcattaaga 240
 tcttatgaag ctgtatatga aagcagcaaa atactccgtg cagagggaca aaacgtcgtg 300
 attgtggccg aaggagatgc gggcttttac tcttccatcc actacatcta cgacaagctg 360
 caacaagacg acatccctgt tgaacagatt gccgggtatc ccgcttttat tgcttccgga 420
 gcgatggcgg gcctgcacat cgtcagtcag gaagagcggc tgatcgtgat accgggtcac 480
 gtcaccgcca aagaactgga cgactacctg aaacatcaga cggtagtggt cataatgaag 540
 ctatcgcaat gtatagacga ggtacaccaa tgtataatta accatccgga ataccaatac 600
 cactactttg aaaaatgtagg gaccgagaag gaatactact cttgctccac cgaagaactt 660
 cgggaaaaaa gatatcctta tttctcggta atgattatca gattcggata a 711

<210> 3708
 <211> 183
 <212> DNA
 <213> B.fragilis

<400> 3708
 cgagggtgtaa ctttatccga atctgataat cattaccgag aaataaggat atcttttttc 60
 ccgaagtctt tcgggtggagc aagagtagta ttccttctcg gtccctacat tttcaaagta 120
 gtgggtattgg tattccggat ggtaattat acattgggtg acctcgtcta tacattgcga 180
 tag 183

<210> 3709
 <211> 1479
 <212> DNA
 <213> B.fragilis

<400> 3709
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 ttaaggggtgc aactaccaca gacaggagca gagattcgtg tacaaagtct gctgagtcg 180
 gagggtattc gctggatggt gcgaaatgca attactaatt tcacaggatt tgcaccattg 240
 ggaatgggtgc tgatagcaat gtttgggtatc ggggtagctc aacattccgg ctttattgat 300
 gcttggtgcc ggcaaggggt gaagaatcga aaaaatacca ggaggatcat cctgtgggtg 360
 attattcttg gattgctatc gaatatagta ggagatgcag gttatataat attgcttccg 420
 atagcagcca ctttgtttta ttcggtagga ttaaattcgg tagcgggaat tattaccgca 480
 tatgtttcgg tttcctgtgg ctacagtgcc aatgtagtgc tgagcaccat ggaccatta 540
 attgcccgtg cgacacagga agcagccatt gattccggag tatatcagg aaatacggga 600
 ccattgtgca attattatct tatgtctgtc tctacattcg ttatcggagc cataatttac 660
 aggataacct gcaaacgact gattccttct ctgggacaat atgaggggaa acagatattt 720
 gaaggctata aacaattgtc acgcaaagaa cgccgggcca tgacaatggc aatcgttgtg 780
 ggaatgcttt atgctgcaat ctttttatgg gccacttttt cttcctgggg tatcttgctg 840
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 gctatcatag gtgccaattt actgtcttct gtgcaggcag gtcctttatg gactttgatt 1140
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tatatgcctt	tagtggtgac	ctacatgcaa	cagtatgata	agcaagccac	ttatgggttca	1380
ctcttaaaat	acacttggcg	atattcggta	tatatactga	taggctggac	aatgttactt	1440
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<210> 3710

<211> 723

<212> DNA

<213> B.fragilis

<400> 3710

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ttttctcgta	ttacgcctgt	ttttcaagaa	aggaggaaag	tcatgaaaag	cagtctaatt	120
gttggtgcat	ttttctgtat	aggttgtctg	gtcggaatct	tcaatgattt	ccagtttgac	180
atgcacaatc	tttctatgta	catactttat	gcgttgatgt	tgcaggttgg	catcagtatc	240
ggaagcaata	agaatctgaa	atctctgata	aaaagcctac	gtcccaatat	gcttttagtg	300
ccgatagcta	ccattgtcgg	aactcttctt	ttttcagctt	ttgccagttt	attgtctgag	360
cagtggagtg	tattcgattg	tatggcagtg	ggaagcggat	ttgcatatta	ttccctttca	420
tctattttga	ttactcaatt	caaggaggct	tctgtaggat	tacagttggc	aacggaactt	480
ggtacgattg	ctttgtctgg	caatatTTTT	cgcgaaatga	tggcattgct	gggcacacca	540
ctgattagga	aatatTTTTg	gaaactggcc	cctatttctg	ccgccggtgt	aaattcaatg	600
gatgtattgt	tgccgtccat	tactcactat	tcggggaagg	acatgatacc	tgttgccatc	660
tttcacggaa	tcctcattga	tatgagtgtg	cctttctttg	tttcattggt	ctgcagttta	720
tag						723

<210> 3711

<211> 222

<212> DNA

<213> B.fragilis

<400> 3711

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gtaatcagat	ccggttcgcc	ggggcctaaa	gatacgaaac	gtatgggatg	tgtagttatc	120
atttgttatc	ggtttatcat	cttaatgttc	tgcaaaaagt	aggaaaatat	ctctatgaaa	180
caagaattat	taagtatctt	tgaccgctgt	aatttgaatt	aa		222

<210> 3712

<211> 492

<212> DNA

<213> B.fragilis

<400> 3712

gaatcacttt	acaagatatt	ttataaaaatc	atgagcgaga	ataaacaagc	attacaggtg	60
gccgcactga	aaaatggcac	tgttatcgat	catatacctt	cagagaaaact	ttttacggta	120
gtttcattgc	tcggattgga	acacatgacg	actaatatta	ctatcggatt	caatttggac	180
agtaaaaaac	taggtaagaa	aggaatcatc	aagattgccg	ataaattttt	ctgtgacgaa	240
gaaatcaatc	gaatttccgt	agtagcccct	catgtgaaac	tgaacatcat	ccgtgattac	300
gaagtagtag	aaaaaaaaga	agtgcgaatg	cctgacgagt	taaaagctat	cgtaaaatgt	360
gctaatacca	aatgtatcac	gaataatgaa	ccgatggcta	ctttatttca	tgtgatcgac	420
aaagacaatt	gtgttataaa	atgtcattac	tgcgagaaag	aacaaaaaag	agaagatatt	480
acaatcattt	ag					492

<210> 3713

<211> 597

<212> DNA

<213> B.fragilis

<400> 3713

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tatccgttgc	ctgccgtatt	ggtaagttgc	ggaagcgatg	aaagcgaata	caatatactt	120

acggtggcat	ggaccggaac	catttgtacc	aatccgccga	tgtgttacat	ttctgttcgt	180
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acccgggata	tggcattcgc	aacagattgg	tgtggagtag	gttcaggga	ggattatcat	300
aagtttgaag	aaatgaaact	aaccccgggc	aaatgttctg	tagtggatgc	acctctcatt	360
gaagaatctc	ccctttgtat	tgaatgccgt	gtgaaagaaa	tcgtatctct	gggatcacat	420
gacatgttta	tttctgacgt	agtaaacatc	cgtgcagatg	atcgatcatc	aaaccgggaa	480
accggaaagt	tggaactggc	agaagcaaat	ccgcttgat	atgtacacgg	aggatattat	540
aatttaggag	aaaagatagg	aaaattcggt	tggtcagtag	aaaagaaaac	aaagtga	597

<210> 3714

<211> 2049

<212> DNA

<213> B.fragilis

<400> 3714

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ttagtcttgt	gcgccctggac	cggaatagca	ttggccatag	attaccatgc	aaaagacagt	120
cttttattac	aattaaaaaca	aacgacaata	gctgcagaac	gaatcaatat	ttaccgaaac	180
ctggcgggaca	tttgttttga	aacccctgat	gaaaagacat	atttgcctca	catgtataga	240
gaagcccaaaa	aggctggcga	tacatcgggt	atgctcaatg	ccttaaatga	tcttgtatgc	300
ggagagacaaa	aagaatatcg	tatggattca	gcataatcatt	atatggaact	gataaaagca	360
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gaaaagaaat	ctgatgaagc	atcactttac	agtaaaatcg	cccaagctta	catcaccggg	540
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accaatccgt	acgatcgata	taactatitt	ctatcgatgg	ataactatta	tctgaatcaa	960
aagccccaac	cccattatga	aaaagcattg	gtggctaata	atagctctgat	acaaattgca	1020
caagaaataa	tcccaaacaa	tctaccggga	ttatacgaca	ttcaatcaca	aacctacgaa	1080
gccatgggta	acttcaaaga	ggcattggga	tacctcagaa	tagcgactca	atataaagat	1140
tcgctgacta	ctgaaaatat	gcaaaagcaa	ttgggtgaac	tccagataaa	atatgaagtg	1200
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gaaaagatga	agacagcttt	cataaactct	atttggcacg	agatacgtag	gccactcaat	1440
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ttagtcatag	agcatctatt	gaacaatgca	aataagttca	ctgaaaaagg	cattatcacc	1800
cttcattgtc	acatcgacga	agcacgcca	caagttcata	taagcgtaac	agataccgga	1860
tgtggtatag	cggcagacaa	acataaggag	gttttcgaac	gattctccaa	gctcaatgca	1920
ttcactccgg	gtaacggatt	gggactttat	ttgtgccaac	tgatcatccg	cagattgtcc	1980
ggaaagataa	gcattgaccc	aacatatata	ggaggtacca	gaataacagt	gattttacct	2040
gttcaatga						2049

<210> 3715

<211> 933

<212> DNA

<213> B.fragilis

<400> 3715

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attatatattg	atttcgtact	cacgaattgt	atccgggaag	atatgtccgg	atgtccccgg	120

gatgatggag	ggctggctct	caaattcagc	tatgatacaa	atgcagactc	aagactgagc	180
actgcgcaag	gtgttgatcg	attggctggt	ttcatattcg	atgaaaaagg	actttttatc	240
tctcaggtaa	acgattctat	gacttcaatc	aacgacgatt	atgtcatgga	gctgccttac	300
aaacagggca	gttaccaatt	tgtagcatgg	ggtaggctatg	ataaaagtac	ttatcagact	360
tctgaatgtg	tgccgaggaa	aacttatatc	gatgatttct	ttctatctgt	aaaacgtcag	420
gaggacaacc	gggtaacca	tcaacccaaa	ctgctctatc	acggtatgca	cgatatagtg	480
gagcttaaca	gtaaagaaaa	aacaatcgta	ttgataaact	tgaacaaat	gacgaatcat	540
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aataacggta	agtatggata	tgattcacia	ttctccgatg	atgaccggat	aacctatatt	660
cccattttatg	aagcatcatc	ggaacaatca	aatccgttga	ttgccgactt	caatgtaatg	720
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tatgatgaga	atcttattgg	taaacttata	ggcggaaatc	ccaatattga	ttttgagcat	840
aaccatgatt	tcaccattga	aatatccttc	gataactaca	tcccgggtcat	tatcaagatt	900
aatggctggg	agatagttaa	tgaagaaata	tga			933

<210> 3716

<211> 954

<212> DNA

<213> B.fragilis

<400> 3716

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<210> 3717

<211> 285

<212> DNA

<213> B.fragilis

<400> 3717

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ttttcttgca	cggcattatg	tatgctatat	gtagtaaaca	atcggttcat	attattcatt	240
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<210> 3718

<211> 1167

<212> DNA

<213> B.fragilis

<400> 3718

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<210> 3719

<211> 2370

<212> DNA

<213> B.fragilis

<400> 3719

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<210> 3720

<211> 183

<212> DNA

<213> B.fragilis

<400> 3720

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<210> 3721

<211> 627

<212> DNA

<213> B.fragilis

<400> 3721

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<210> 3722

<211> 597

<212> DNA

<213> B.fragilis

<400> 3722

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<210> 3723

<211> 414

<212> DNA

<213> B.fragilis

<400> 3723

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<210> 3724

<211> 780

<212> DNA

<213> B.fragilis

<400> 3724

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<210> 3725

<211> 4491

<212> DNA

<213> B.fragilis

<400> 3725

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caaattattc	gtgaccatga	tgaatttgcc	ggaaggcgtg	gttgtcgcat	taatgcagag	4440
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<210> 3726

<211> 990

<212> DNA

<213> B.fragilis

<400> 3726

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caggatgtgg	tacgtgtcga	tattttgttt	ggaggcggac	gatggcaaca	atcacaaaaa	180

ctgcaggcat	tatttgccaa	tgcgatgtta	cgtgaaggat	cccgaaaata	tacagcggcg	240
gagatagccg	aaaagttgga	ttattatgga	gcatggcttg	aattgtccag	ttcggcggaa	300
tatgcatata	tcacactgta	ttcgttaaat	aagtattttg	ccgaaacgct	cgatgtactc	360
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atcactctgt	tccgaggata	ttttggaagc	agactgatgt	ctaatatccg	ggaagagaaa	900
gggtacacgt	atgggatttc	ggccggaatc	atgtttatcc	gggcaacggg	ttgctgggta	960
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<210> 3727

<211> 957

<212> DNA

<213> B.fragilis

<400> 3727

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aaacaagtaa	aagatctatg	tgctaacttt	tccgcactga	tacgcagtat	gcgtaaccga	180
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ggaacatatt	ttatcggtca	tgcaagtacc	ttcagtagca	cccacaaaat	gttggagaat	840
atgtttattg	gtgatcctgt	gggaaacacc	gaccgtttac	tggacttcag	cactccgata	900
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<210> 3728

<211> 717

<212> DNA

<213> B.fragilis

<400> 3728

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cgtaattgct	acactgctga	tggtaaactt	actaatatcc	tagtctacag	agtagatcag	180
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ggcaaaacac	tcaattccgg	acaaatggta	gctcgttgta	gcgatggaaa	tttttctatg	300
agtatgggag	atgtggcaac	attccccaca	gcactcaaca	tgatgaacgc	tgatgtatat	360
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gatgacgaat	ttgatgacgg	aactctgcgt	ctttacaaaa	aaggaaataa	aaacaaccgg	480
gctgaaatct	ccgtattcga	cagagaattt	gttactacag	aaactgtaaa	tactcctgct	540
ggagcatttt	attgtacgaa	agtaaagtat	gaaatgaata	tctggacacc	gaaagaaaca	600
attaaggggt	acggatatga	atgggtatgca	cccaatattg	gtattgtccg	ttccgaacaa	660
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<210> 3729

<211> 1035

<212> DNA

<213> B.fragilis

<400> 3729

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accgatgtta	aagttgtggc	cgatcgtatc	aatgccggca	ttaactgtgg	cgaacttact	120
tgcctgttgg	gagctaattg	agtggggaag	tccaccctgt	tgcgtacact	ttcggcattt	180
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tacatcgaaa	ccggtgatct	gaaagacggg	aacggattca	tctacatcc	gcaggaaggg	960
gaagccgtaa	cgctgaacag	cattgaagaa	ctgttggaga	gattgcaggc	cggaagtgcc	1020
gaaagagccg	tttaa					1035

<210> 3730

<211> 2178

<212> DNA

<213> B.fragilis

<400> 3730

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ttagtataaa	ccataccggc	ctccactaca	tatgcccgga	cgcgagggaac	atttgcgacg	180
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gtaatatgcca	atgagccttc	ggtggatgat	agcgaagatt	tgggtgaaaa	gaacatcaat	420
ctccggttca	acaatatcac	ttccgatttt	ccaatgtatg	gggagtatga	attgcccgga	480
ggattagaag	caacggttat	aaataatatt	accggaataa	agatgttacg	ttccattgcc	540
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ccgagcgtac	ctgccggaag	ttccggaaat	gtaaacagta	tcctgtatcc	tgtacctgct	720
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caaccgggtt	actaccgtat	ggattttgat	cccgataatg	ttgaaaatgc	tttcgggcaa	900
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accattaata	ataatgcgtc	caaactcata	gctaattgtt	ttgcctggat	agcagaaact	2160
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<210> 3731

<211> 1287

<212> DNA

<213> B.fragilis

<400> 3731

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ggtgcagaat	gggccaatgt	gcaacccac	tcaggagcac	aggctaatac	agccgtattt	300
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aagaatgccg	ctgtattagc	acaagccttg	attgaccgtg	gtttcactat	tgtttcaggt	960
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tctaacgtag	aaaatgaaga	agtgatagca	caagtacgtg	cacgtgtcaa	caagacaatg	1260
gaaaaatatc	cgatcttcgc	atatttaa				1287

<210> 3732

<211> 1404

<212> DNA

<213> B.fragilis

<400> 3732

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gcattgacta	tggctgcatg	cagcaatgac	aatgattggg	ttgaccagtc	cagcaatccg	120
gacgtaattg	ccccggatgc	atatgcctct	ttttccatca	acattcccca	cgcacgaag	180
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gtgtttattt	atgacgcaga	atctcccaat	acacctaactg	tagctgaatt	tacggctcgca	300
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<210> 3733

<211> 1407

<212> DNA

<213> B.fragilis

<400> 3733

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accaccatgg	cggttatcgg	agtgttctac	ctgttcagtt	caaggatatat	cgatggggttg	180
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<210> 3734

<211> 939

<212> DNA

<213> B.fragilis

<400> 3734

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gaaggcaaaag	tagtcgctac	cctgttcttt	gaaccttcta	cgcgtaccgc	actaagtttc	180
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gtgattgtta	tgagacatta	tctggaagga	gcagcacgct	atgcaagtga	agtggctccg	360
gtacctatcg	taaatgccgg	agacggagcc	aaccagcatc	cttcgcaaac	gatgctcgat	420
ctctattcta	tatatataaa	acaaggtaga	ctggagaatc	tgaatatcta	tttggtagggt	480
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cttcgtattc	ttcatccggt	accacgtgtc	aatgaaatag	cttatgatgt	ggatgacagt	840
ccgaaagctt	attatitttca	acaagcacia	aatggactct	atgcccgtca	agctatactt	900
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<210> 3735

<211> 903

<212> DNA

<213> B.fragilis

<400> 3735

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gacattttgcc	ccggcaaaga	ttatcgcttc	gtacgtaccg	atatccggga	cgaaaatgaa	180
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<210> 3736

<211> 735

<212> DNA

<213> B.fragilis

<400> 3736

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aagcggcaga	atgatctgat	cggaagggtt	tttccacagg	gtgaacgggt	aggagtaa	660
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<210> 3737

<211> 546

<212> DNA

<213> B.fragilis

<400> 3737

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caatacggag	atttcctgat	cgatatggga	ttgtttatag	cagctcctcc	caaactgccg	180
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aaatcttccg	atgggaattt	cggtatccgc	attgaagtcc	agcaggggcg	caactatcca	540
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<210> 3738

<211> 210

<212> DNA

<213> B.fragilis

<400> 3738

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ttttgtcttt	tttctgctga	atctgttggt	gggctcgggt	tccattccca	tcggttcggg	180
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<210> 3739

<211> 228

<212> DNA

<213> B.fragilis

<400> 3739

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aattatgcaa	caatcgga	tggtgtgtaa	gacgtgtatc	tattttcgaa	acttcgtcat	180
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<210> 3740

<211> 219

<212> DNA

<213> B.fragilis

<400> 3740

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gcattattat	taatgggtccc	ggaattattg	tttatacggg	tatcggtagt	tgacgtcgaa	180
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<210> 3741

<211> 957

<212> DNA

<213> B.fragilis

<400> 3741

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gcgagatact taggagacaa ttatcaatcc ggttctatct tcttttagagc caaataa

957

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<211> 1344

<212> DNA

<213> B.fragilis

<400> 3742

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gataaggagg	aaattgctgc	cgtgtacgag	gaaatcattg	atgaatattt	gcaaaaagga	180
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gatttatatta	atctgttatt	gtctgaggga	tacgaagttc	actttaattt	tatttttatt	540
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<210> 3743

<211> 1356

<212> DNA

<213> B.fragilis

<400> 3743

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<210> 3744

<211> 2121

<212> DNA

<213> B.fragilis

<400> 3744

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<211> 483

<212> DNA

<213> B.fragilis

<400> 3745

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<210> 3746
<211> 702
<212> DNA
<213> B.fragilis

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<210> 3747
<211> 1611
<212> DNA
<213> B.fragilis

<400> 3747
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<210> 3748
<211> 408
<212> DNA

<213> B.fragilis

<400> 3748

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ctacaagctg	tgaaagaggt	taccccgga	gaaatacggg	agttggcagg	ccgctatttg	360
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<210> 3749

<211> 324

<212> DNA

<213> B.fragilis

<400> 3749

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<211> 1713

<212> DNA

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<210> 3752

<211> 225

<212> DNA

<213> B.fragilis

<400> 3752

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<210> 3753

<211> 1224

<212> DNA

<213> B.fragilis

<400> 3753

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<210> 3754

<211> 339

<212> DNA

<213> B.fragilis

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<210> 3755

<211> 465

<212> DNA

<213> B.fragilis

<400> 3755

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<210> 3756

<211> 1173

<212> DNA

<213> B.fragilis

<400> 3756

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<210> 3757

<211> 801

<212> DNA

<213> B.fragilis

<400> 3757

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 <211> 1758
 <212> DNA
 <213> B.fragilis

<400> 3758
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 <211> 240
 <212> DNA
 <213> B.fragilis

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 aagtgtctat tgaagcaatc cctgaaaaag aaagctctga taatgcaacg caccgtcatc 180
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<210> 3760
 <211> 321
 <212> DNA
 <213> B.fragilis

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aactccgtga ctgcgctggt aggcgcgcgcg gtcgtggcat cagtgttggt ccgtaagcgt 300
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<210> 3761

<211> 867

<212> DNA

<213> B.fragilis

<400> 3761

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<210> 3762

<211> 2115

<212> DNA

<213> B.fragilis

<400> 3762

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<210> 3763

<211> 477

<212> DNA

<213> B.fragilis

<400> 3763

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<210> 3764

<211> 408

<212> DNA

<213> B.fragilis

<400> 3764

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<210> 3765

<211> 231

<212> DNA

<213> B.fragilis

<400> 3765

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aaagcgtacg	gctacaatat	tgtaccttcg	aagatgggac	atcagagtgc	aaaccaatat	180
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<210> 3766

<211> 660

<212> DNA

<213> B.fragilis

<400> 3766

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<210> 3767

<211> 1083

<212> DNA

<213> B.fragilis

<400> 3767

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<210> 3768

<211> 237

<212> DNA

<213> B.fragilis

<400> 3768

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gaaaatgtaa	tttcggagct	tgacacagcg	acagagcggg	tgaagacctc	aacagaggct	180
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<210> 3769

<211> 465

<212> DNA

<213> B.fragilis

<400> 3769

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<210> 3770
 <211> 1125
 <212> DNA
 <213> B.fragilis

<400> 3770
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<210> 3771
 <211> 1113
 <212> DNA
 <213> B.fragilis

<400> 3771
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<210> 3772
 <211> 477
 <212> DNA
 <213> B.fragilis

<400> 3772

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aaagaatatt	attatttttag	aagcgtgaat	ctggtcgaat	ccgatgccta	cgacaacaac	420
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<210> 3773

<211> 2742

<212> DNA

<213> B.fragilis

<400> 3773

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<213> B.fragilis

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<212> DNA
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ttgaaaattg ggtaa 195

<210> 3776
<211> 1239
<212> DNA
<213> B.fragilis

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<211> 642

<212> DNA

<213> B.fragilis

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<210> 3778

<211> 369

<212> DNA

<213> B.fragilis

<400> 3778

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<211> 1533

<212> DNA

<213> B.fragilis

<400> 3779

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<211> 2406

<212> DNA

<213> B.fragilis

<400> 3780

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<210> 3781

<211> 546

<212> DNA

<213> B.fragilis

<400> 3781

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<211> 2364

<212> DNA

<213> B.fragilis

<400> 3782

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<211> 915

<212> DNA

<213> B.fragilis

<400> 3785

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<210> 3786

<211> 258

<212> DNA

<213> B.fragilis

<400> 3786

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<210> 3787

<211> 882

<212> DNA

<213> B.fragilis

<400> 3787

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<210> 3788

<211> 1110

<212> DNA

<213> B.fragilis

<400> 3788

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<210> 3789

<211> 1398

<212> DNA

<213> B.fragilis

<400> 3789

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1398

<210> 3790

<211> 357

<212> DNA

<213> B.fragilis

<400> 3790

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gatgtaatca	aaggttatat	aaaagcatat	aatcatttaa	aagcagccac	agaatagaa	180
gatttattca	gaatcggaag	tctgcattat	gaacgattga	aaggagactt	aaaagacttt	240
gaatcggtta	gatgtaccgg	acggtggaga	ttaatatattc	aaagctccac	aatagacggt	300
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<210> 3791

<211> 1599

<212> DNA

<213> B.fragilis

<400> 3791

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<210> 3792

<211> 510

<212> DNA

<213> B.fragilis

<400> 3792

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cgcaagttta	cccaacgtgt	cagccggatg	aaattctttc	gctaccact	atccaaatat	420
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<210> 3793

<211> 438

<212> DNA

<213> B.fragilis

<400> 3793

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<210> 3794

<211> 723

<212> DNA

<213> B.fragilis

<400> 3794

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<211> 2340

<212> DNA

<213> B.fragilis

<400> 3795

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<210> 3796

<211> 1743

<212> DNA

<213> B.fragilis

<400> 3796

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<210> 3797

<211> 210

<212> DNA

<213> B.fragilis

<400> 3797

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<210> 3798

<211> 1434

<212> DNA

<213> B.fragilis

<400> 3798

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<210> 3799

<211> 1272

<212> DNA

<213> B.fragilis

<400> 3799

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<210> 3800

<211> 2232

<212> DNA

<213> B.fragilis

<400> 3800

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<211> 591

<212> DNA

<213> B.fragilis

<400> 3801

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<210> 3802

<211> 1314

<212> DNA

<213> B.fragilis

<400> 3802

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aatctgaaag	tagcattgaa	attgggtaat	ctgatcaaac	aaaactgcaa	tgatgtgaag	300
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<211> 297

<212> DNA

<213> B.fragilis

<400> 3803

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atccttccgc	gccgtatcac	cgggtacttct	ttgaagttcc	agcgtcgtat	tgcgcaggct	240
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<210> 3804

<211> 1344

<212> DNA

<213> B.fragilis

<400> 3804

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<210> 3805

<211> 1377

<212> DNA

<213> B.fragilis

<400> 3805

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<210> 3806

<211> 900

<212> DNA

<213> B.fragilis

<400> 3806

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<210> 3807

<211> 894

<212> DNA

<213> B.fragilis

<400> 3807

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<210> 3808

<211> 1203

<212> DNA

<213> B.fragilis

<400> 3808

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<210> 3809

<211> 1053

<212> DNA

<213> B.fragilis

<400> 3809

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<210> 3810

<211> 192

<212> DNA

<213> B.fragilis

<400> 3810

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<210> 3811

<211> 1050

<212> DNA

<213> B.fragilis

<400> 3811

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<210> 3812

<211> 231

<212> DNA

<213> B.fragilis

<400> 3812

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<210> 3813

<211> 441

<212> DNA

<213> B.fragilis

<400> 3813

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<210> 3814

<211> 249

<212> DNA

<213> B.fragilis

<400> 3814

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<210> 3815

<211> 714

<212> DNA

<213> B.fragilis

<400> 3815

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<210> 3816

<211> 1350

<212> DNA

<213> B.fragilis

<400> 3816

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<210> 3817

<211> 246

<212> DNA

<213> B.fragilis

<400> 3817

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 3820
 <211> 1902
 <212> DNA
 <213> B.fragilis

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<210> 3821

<211> 1431

<212> DNA

<213> B.fragilis

<400> 3821

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<210> 3822

<211> 1350

<212> DNA

<213> B.fragilis

<400> 3822

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ggtaaaggta	acgactttct	gggggtgggtt	catctgccct	cttctatcag	taaagagcac	180
ctggccgacc	tgaagctac	cgcacaagta	ttgagagaca	attgtgaggt	agtgatcgta	240

gccggtatcg	gaggaagtta	cctgggtgcc	cgtgcggtga	tcgaggcatt	gtcaaacagc	300
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<210> 3823

<211> 183

<212> DNA

<213> B.fragilis

<400> 3823

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aatggtgaat	accgcttcaa	ttctatttct	gtagtgcgga	aatatgaatt	gggaagcgcg	180
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<210> 3824

<211> 1329

<212> DNA

<213> B.fragilis

<400> 3824

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1329

<210> 3825

<211> 246

<212> DNA

<213> B.fragilis

<400> 3825

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<210> 3826

<211> 1776

<212> DNA

<213> B.fragilis

<400> 3826

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<210> 3827

<211> 333

<212> DNA

<213> B.fragilis

<400> 3827

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cagttccgct	ccataacaca	aaaaatcgat	atcatgataa	aacttaaact	aagcattctt	180
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<210> 3828
 <211> 552
 <212> DNA
 <213> B.fragilis

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cggaggtgga	attctccctg
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tcagttcttt	cgattgttcg
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<210> 3829
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 <212> DNA
 <213> B.fragilis

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acgttttcgt	agtggcggca
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<210> 3830

<211> 936
 <212> DNA
 <213> B.fragilis

<400> 3830

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 <211> 1902
 <212> DNA
 <213> B.fragilis

<400> 3831

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1902

<210> 3832

<211> 1065

<212> DNA

<213> B.fragilis

<400> 3832

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aaagcattga	ttgatgaatt	aaagcgaaaa	tatagtaatt	gocgctatca	ggatgcttca	1020
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<210> 3833

<211> 486

<212> DNA

<213> B.fragilis

<400> 3833

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<210> 3834

<211> 534

<212> DNA

<213> B.fragilis

<400> 3834

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<210> 3835
 <211> 576
 <212> DNA
 <213> B.fragilis

<400> 3835
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<210> 3836
 <211> 2187
 <212> DNA
 <213> B.fragilis

<400> 3836
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2187

<210> 3837

<211> 2154

<212> DNA

<213> B.fragilis

<400> 3837

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<210> 3838

<211> 219

<212> DNA

<213> B.fragilis

<400> 3838

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gccagttacc	atgtttttat	ttacatagta	attggccatt	tctatatggt	aacagcttct	180
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<210> 3839

<211> 606

<212> DNA

<213> B.fragilis

<400> 3839

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<210> 3840

<211> 2736

<212> DNA

<213> B.fragilis

<400> 3840

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<210> 3841

<211> 795

<212> DNA

<213> B.fragilis

<400> 3841

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<210> 3842

<211> 1179

<212> DNA

<213> B.fragilis

<400> 3842

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<211> 1737

<212> DNA

<213> B.fragilis

<400> 3843

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<211> 3528

<212> DNA

<213> B.fragilis

<400> 3844

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<212> DNA

<213> B.fragilis

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<211> 435

<212> DNA

<213> B.fragilis

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<211> 738

<212> DNA

<213> B.fragilis

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<211> 1458

<212> DNA

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 <211> 516
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 <213> B.fragilis

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<212> DNA

<213> B.fragilis

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<211> 2718

<212> DNA

<213> B.fragilis

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<211> 1158

<212> DNA

<213> B.fragilis

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<211> 468

<212> DNA

<213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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 <212> DNA
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<211> 522
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<210> 3861
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 <212> DNA
 <213> B.fragilis

<400> 3861
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 gaaatgctgg atgaagagaa agacgcagta aacgccttta ttaaaaaaca caatatccag 180
 actatttcgg agagtgaact tgaagcaaac ggatataaaa cggatacgac caagaacgaa 240
 tacgtggctt tctcaaacgg agtctacatg caaattgtgg ataagggtat agttaccgat 300
 aaaccggaaa atgactctat caagaataac aatattgtag ccgtacgctt tgtagagcac 360
 gacatcaagg cgaacgatac cacttgcttc aatgtggtgc ttcccggttt cgaaaattat 420
 ccgaattact atacttatcc ggacgttttc cgttatgtgg ataacggtac ttcagtagcc 480
 ggtgtattta cagaggggtc gatgtatgcc aaatatggta cgacggatgt tcctcccgga 540
 tggctgcttg ctttaaagta tgttaccaat tatgcccatg tgagaatgat tgtaccttcg 600
 aagatgggac atcagagtgc aaaccaatat gtaaaccctt atttctacga tattcgtaaa 660
 tttcagaaa g cattgaacta a 681

<210> 3862
 <211> 465
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (305)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3862
 agggttcatg tcccgcgatga acaaggacct ctgacggttt cgtatgcccg cgatgtacgc 60
 gtcattgtat atgaagaaaa gatgcaccgg gtagactcta atgaaatttc gttcatgctg 120
 gcggaacgta atgccttcag cgaagcgttt aagaacgccg gaccgaagat tctcgagccc 180
 atttatgatg tggaagtctt cgtaccgtcc gataagatgg gtgacgtgat ggggtgacctt 240
 cagggacgcc gtgccatgat catgggtatg agcagcgaac acggttatga gaaactgggtg 300
 gctanagtgc ctttgaaaga gatgtcttct tattcaaccg ctcttagttc gcttaccgga 360
 ggccgtgctt cgttcattat gaaatttgca agttacgaac tggttccgag tgatgtgcag 420
 gataagttaa taaaagactt cgaatccaaa caaacagaag agtaa 465

<210> 3863
 <211> 1584
 <212> DNA
 <213> B.fragilis

<400> 3863

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aagatgcgta	aagaacaatt	taatacatcc	gtgcgaaatg	ctttgtttca	ggtttcaaag	180
gatgtagagt	atgatgaaac	gcaacgttgg	ctggttagagg	atatcactga	agcggaaacgc	240
agagcactgg	ctcagtcttc	ttctactacc	gaacagaaaa	acggtttaat	tcagcaatcg	300
gagcgttata	ggttcaagtc	accggacgga	accctgtatt	cggagtttga	actgaagatg	360
attaccaccg	agccgctcgaa	agtgcccaaa	gccatgattt	cggaaaggca	tggcccggaat	420
accattccgc	agacatcacg	gagcttgact	gacgctatta	aaaataggta	tatgtatcag	480
cgttttctgc	tcgacgatgt	ggctttgcgg	atgatttaca	aggcaagcga	taaatcgatt	540
ggcgaacggg	tgaactttta	gaagctggat	aattatctga	aatcgaactt	tattaataat	600
ggtgtagagt	tgctctacca	tttttcggtg	atcgataaag	atggacgtga	agtatatcgt	660
tgctcggact	acgaagacgg	agggagtga	gactcttata	cgcaacctct	gttccagaat	720
gatccgcctg	cgaagatgag	tattgtgaag	gtgcactttc	ccggtgaaga	agattataatc	780
ttcgactcgg	ttagttttat	gattccttcg	atgatattca	ctatcgtact	gctgattaca	840
ttcatcttca	ccatctacat	cgtcttccgt	cagaagaagt	tgacagagat	gaagaatgac	900
tttatcaaca	acatgacgca	tgagttcaag	acaccgatat	cgaccatctc	gcttgctgcc	960
cagatgctga	aagacccgcg	agtccgggaag	tcgccgcaga	tgttccagca	tatatcgggga	1020
gtcatcaatg	atgaaacgaa	gcggttgaga	ttccaggtgg	agaagggtgct	tcagatgtct	1080
atgttcgaca	ggcagaaaagc	aacgctgaag	atgaaggaaac	tcgatgccaa	tgagttgatt	1140
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aaccttgagg	ctaccaatcc	tggtatatatt	gcggacgaaa	tgcatatcac	caatgtgata	1260
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attaaaaaag	aaaacctgaa	gaaggtgttt	gataagttct	atcgctgca	tacaggtaat	1440
ctgcacgatg	taaaaggttt	cggctcggga	ctggcttatg	tgaaaaagat	tattcaggat	1500
cataagggaa	ccatccgggc	agagagtga	ctgaatgtag	gaactaaatt	tattattgca	1560
ttacctttat	taaaaaatga	ttga				1584

<210> 3864

<211> 1467

<212> DNA

<213> B.fragilis

<400> 3864

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ctatggaacc	gctgtcttga	aattattaga	gacaatgttc	ctgagtcgac	atacaaaaaca	120
tggtttgttc	ccattgttcc	tttaaaatat	gaggacaaaa	cgtaaatcgt	acaagttccc	180
agccagtttt	tctatgaatt	cctggaagat	aaatttgttg	acttgctacg	taagacgtta	240
tataaggtta	taggcgacgg	cacgaagttg	atgtacaaatg	tgctggtgga	caaaagttca	300
ggggcaaccg	tgaaccagga	gtctactacc	cgctctacgg	ctattcccca	atccggactt	360
ccccgtgttg	atgaaaggaa	agctccgggc	ttgctgcgtg	caccggccgt	tcaggatctt	420
gatccccatc	taaatccgaa	ctataacttt	gagaccttta	ttgaaggata	cagtaataag	480
ctttcaagaa	gtgttgccga	agctgtttgc	gagaatccgg	caaaaacagt	cttcaatccg	540
ctgttctctc	atggagcatc	gggagtagga	aagaccattt	tggccaatgc	catcggtacc	600
cgcatacaaag	agttgtatcc	ggacaaaaga	gtgctttatg	tttcagcaca	tttatttcag	660
gtacaatata	ccgattccgt	acgtaacaat	acaacgaatg	acttcatcaa	cttctaccaa	720
acaatcgatg	tattaattat	tgatgatatt	caagaatttg	cagggtgcac	caaaacacaa	780
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tccgaccgtg	ctcctgtatt	attgcagggt	atggaagagc	gcttactgac	ccggtttaaa	900
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aataaaaattc	atcgggatgg	attacaattc	ccttcggaag	taatcgacta	tattgctgag	1020
aatgttaatg	aaagcgtgcg	tgacctggaa	ggtattgtca	tttccatcat	ggccactct	1080
accattttaca	ataaagaaat	cgatctggac	ctggcacaaac	gcattgttcg	caaagtcgtt	1140
cgttgttgaga	caaaagctgt	cactatcgat	gatatacatc	acgtagtttg	caagcacttc	1200
gaatttggagt	ctctctgtat	ccataccaaa	tcaagaaaaa	gggaagtcgt	acaggcacgc	1260
caagtagcca	tgtatttagc	taaaacacat	acagacttct	ctacttccaa	aattggaaaa	1320
ttcataggca	ataaagatca	tgccaccgtt	ttgcatgcat	gcaaaacagt	aaaagggcaa	1380
tgtgagggtg	acaaaggatt	ccgatcggat	ctggaaaaaca	tagaaacttt	actcaagaaa	1440

agaaacgtga gtaacggtga acggtag

1467

<210> 3865

<211> 666

<212> DNA

<213> B.fragilis

<400> 3865

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gattatattcc	gcacactgac	tgaatttgct	agaagtgaat	atagccagta	tcagatcttt	120
cctccgggaa	agttgatatt	caatgcattc	aatttatgtc	cgtttgataa	agtaaaagta	180
gtcattatcg	gtcaggaccc	ctaccatggt	cccggtcagg	cacacggcct	ttgtttctcg	240
gtgaatgacg	gagtagcctt	tccaccttct	ctggtgaaca	ttttcaaaga	aataaaagaa	300
gatatcgga	cgccagcccc	gtccaccggt	aacctgacaa	gatgggctga	acaggggtgc	360
ctgttgctga	acgccaccct	gacagtagcg	gcccaccagg	ccggttcaca	ccaacgtcgc	420
ggttgggaag	agtttacaga	tgctgccatc	cgtgtcctgg	ccgaagaaaag	agaaaatctg	480
gtattcatcc	tttgggggaag	ttatgcacaa	aagaaagggtg	ccttcattga	ccgtaacaag	540
catttggtac	tcagttcggc	acatccttct	cccctctctg	cctacaatgg	cttctttggg	600
aataagcatt	tcagtaaaac	aaacgaatac	ctgaaagccc	atggaaaaac	agaaataaac	660
tggtaa						666

<210> 3866

<211> 531

<212> DNA

<213> B.fragilis

<400> 3866

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aaaaaagacc	tgattgaatg	ggttcttttg	aactcggagt	tattgatggg	acataagttt	120
tattgtacag	gtaccaccgg	tacgctgata	caggaggcat	tgaaagagaa	acatcccgat	180
gtggagtggg	attttactat	cctgaaatcc	ggtcctctgg	gcggcgacca	gcagatggga	240
tcgcgtattg	tgatgggaga	gatcgattat	cttttcttct	ttaccgaccc	gatgactctt	300
cagccgcacg	atacggatgt	gaaggcactg	acccgtctgg	caagtgtgga	aaacatcgct	360
ttttgttgca	accgttccac	tgccgatcat	attattttcaa	gtccgctctt	ccttgatccg	420
gactatgaac	ggacacatcc	ggactactcg	ggctatacga	aacgtttcga	gaataaaccg	480
gtggtgaccg	aggcggtaga	atcgggtgaag	aaaagaaaga	gaaagaaata	a	531

<210> 3867

<211> 570

<212> DNA

<213> B.fragilis

<400> 3867

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gattcgcaaa	cagcgttccg	ggccttctac	gatatgacgt	acgaccgtct	ctaccgcata	120
gcctactact	atgtaaaacg	cgaagaatgg	tcgcaggaaa	tcgtactcga	tgtgttcctg	180
aaactctggg	aacagcgag	ctcgttcccc	gaagtcaaaa	gcattgagga	ctattgcttc	240
atattgggtta	aaaacgcttc	actcaactat	ctggagaaaag	aaaacaggcg	taccacggta	300
tctaccgaga	cattgccgga	accogaagca	caaagcgact	cacccgaaga	atcgatgata	360
agtgaagagt	tgtttgccat	ttatgtgaaa	gcactcgacc	gcttgcccca	acgttgccaga	420
gaggtattca	tccgcacccg	ggaagagaaag	caaagctatg	cacaggtagc	agaagaactg	480
ggtatcagca	ccaagaccgt	agacgtctca	ctccagaagg	caaccatccg	gctgaaagaa	540
gcaatatcga	tggtgaataa	tgatcgataa				570

<210> 3868

<211> 540

<212> DNA

<213> B.fragilis

<400> 3868

aatatgaaag	tgcttgattt	gatagacaaa	tattatcctc	aggataatga	actgaaacat	60
atittgaaag	tgcatagccg	gtcgggtggc	gataaagctc	tatggatcgc	cggaaaacat	120
ccggaactga	atctggatac	tgtctttctg	gaagaagccg	ccatgctgca	tgatattgg	180
atcttctctga	cacatgctcc	gggtattcaa	tgttttggga	cggaaacctta	catttgctcat	240
ggatatctcg	gagccgggct	tgtccgtaag	gaagggttcc	ctcgacacgc	attagtctgt	300
gaacggcata	ccggggcggg	actttcactg	aaagatatta	tggatcaaaa	acttcctgtc	360
ccccatcgcg	aaatgttgcc	gggtgagtatg	gaagaacaag	tgatttgctt	tgccgacaag	420
tttttttctga	aaacccatct	cgaccgtgag	aaaactgtgg	agggggctcg	taagagcatc	480
gccaaagtatg	gagatgaagg	tttgcaacgt	tttaacaatt	ggtgtaagct	atttctttag	540

<210> 3869

<211> 1128

<212> DNA

<213> B.fragilis

<400> 3869

aacgatcaat	ttgataacat	tttagcctat	tgttcataca	gatatagata	ttattcatat	60
ctttgccgac	aaataacaat	caataaacct	atgagttacc	taataaaaacc	tcagaattat	120
aaacctttgc	ttgacctgaa	acagacagaa	ctgggcatca	aacaaattaa	agagttcttc	180
cagctgaatc	tttcttcgga	gctgctctca	cgcggtgtca	cagccccact	cttcgtactc	240
aaaggaatgg	gtatcaatga	tgacctgaac	ggatatagaac	gtcctgtctc	atttcccatc	300
aaggacctgg	gcgatgcaca	agcgggaagta	gtacactcac	tcgctaaatg	gaagcgcttg	360
accttggcag	attatcacat	tgaaccgggt	tatgggtattt	atacggacat	gaatgccatc	420
cgctcggcag	aagaactggg	caatctgcat	tcactttatg	tagaccagtg	ggactgggaa	480
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tatgccgcta	tgatccgtac	ggaatatatg	gtgtacgaaa	tgtaccgcga	aatcaaacct	600
tgcttccac	agaagttgca	ctttatccat	tcggaagaat	tacgccagtt	gtatcccgat	660
atggaacctta	aatgccgcga	acatgccatc	tgtaaaaagt	atggagccgt	atttatcatc	720
ggcatcggtt	gcaagctgag	tgatggcaag	aaacatgacg	gacgcgcccc	ggactatgac	780
gactatacca	gcaaaggggt	gaacgacctta	cccgactga	atgggtgacct	gttgctctgg	840
gacgatgtgc	tgcaacgctc	cattgagttg	tcctcaatgg	gtatccgtgt	agacaaagag	900
gctcttttac	gccaggtgaa	gcaagagaat	caggaacaaa	gactggaact	ctatttccat	960
aaaagattat	tgaatgatac	gcttccactc	tctatcggcg	gcgggtatcg	acaatcacgc	1020
ttgtgcatgt	tctacttacg	caaagctcat	atcggcgaga	ttcaggcaag	tatctggcca	1080
gaagaaatgc	gtcgtgaatg	tacagccctt	aataacacc	ttatttaa		1128

<210> 3870

<211> 636

<212> DNA

<213> B.fragilis

<400> 3870

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acgcaaacc	tgctcagcta	tatggaggag	atccgtttca	aaaagaaaga	agtcacgtc	180
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tcgggtatggg	gatagtgtga	aaatactgca	tcgcacatca	cgattgaagt	catgtgcgat	360
agcatagcct	actgtattcc	gggatcaacc	ctgaacaatc	tttatgcttc	atcgctcgga	420
ctcgccaacc	tgggacggca	actgatggaa	cggcaactgc	tcagcctcga	aaactggctg	480
atcagcgccg	gaagccccaa	agctaaagaa	cgttatctga	cccttatcaa	agaacatccc	540
gaactattac	aaaatgtgcc	tttaaagcat	atagcctctt	atttgtggat	tacaccacag	600
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<210> 3871

<211> 1560

<212> DNA

<213> B.fragilis

<400> 3871

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aacaaaccct	atttcattgc	atctttactc	tcttttagctt	tatggacagt	cattccttct	120
gtttttgccg	gagatgttgt	tttaaaagta	tttgaaggga	aaccacgtat	caattctcct	180
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cgaccgatgc	agtggagtgc	ggaaaaactc	cccgaaggac	tggaaactgga	ttccaagact	300
ggaattatta	gtggagtgcg	gacttccaaa	ggagattata	ctgtaaccct	gaaggctgag	360
aatgcattag	gtgtaagtgt	gaaacaattg	gtcatccgca	ttggtgatga	attattatta	420
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aaaccggcaa	gctctccgca	aactgtgata	ttgaatgaaa	atacgattgc	cgatttatca	1440
ttcgagcaga	tatactgttt	ggacagccat	ttgacaaaga	gtggtagtga	ttcaaaagaa	1500
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<210> 3872

<211> 504

<212> DNA

<213> B.fragilis

<400> 3872

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gaatatgatg	aactcaatga	tacagaccgt	gccttattgg	atgacgccat	cgaggcaacc	120
cggcgcagct	atgcacctta	ttcgcacttt	tccgttaggag	cggcagcact	gctggccaac	180
ggtgtggttag	tgacaggaac	caatcaggag	aatgcggcct	atccgtccgg	actctgtgcc	240
gaacgcacca	cgctatttta	tgccaactcg	cagtatcccg	accaagctgt	ggtgacactt	300
gccatcgctg	cagttaccga	gaaggacttt	atcgacactc	ctatcccgcc	ctgcgggtgct	360
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tatggcaaga	agtgtatcta	cgaagtacaa	agcatcggac	atattattacc	cctgtcattt	480
gacgcatacag	ccatggagga	ttga				504

<210> 3873

<211> 1281

<212> DNA

<213> B.fragilis

<400> 3873

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atgtttgtgg	tacagttgta	ttcttatacc	cgtccgatcg	gatatgatat	cacgaactgc	180
tggaaacttt	cgttcgtatg	gtatcccag	gatgccgacg	agtatgtcaa	tgacaccacc	240
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gaggtgggata	atgcttgcgt	tgctttctac	tcttcaccct	attccggtgg	caactcctgg	360
acacagatca	tgccctgtac	agccgacagc	agcaagttca	aagagcaatc	ttatcatcaa	420
tatatcgctt	ctgccgaatt	ctatgatgta	ttccgcatca	agaaccgtga	ggggaaaccg	480

cttagcgaac	tgctgactca	gaaacagttg	tcgtatttta	taactcctgc	gttggagaaa	540
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gagattcata	ttgcccgggt	aacagctccg	gtgcgtatta	cagaatttgt	aaagccggaa	660
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gcattctaata	tggaggttac	tgtccgaatg	aaagaagaac	tgacatcgga	acagatggga	780
cattttctca	accgtatgaa	gaatcagttg	acggaaaaca	atctctacat	aaccggcatg	840
gaagatatga	agcaacagcg	cagtgatcgt	ctgcaatacg	aatggcgaaa	gatcagtatc	900
aacctcctgc	tgtctgtctt	catcctgctc	aatgtacttt	tcggtataac	gggaacattc	960
tggctgcgca	tcgagcaacg	gcgctgcgag	accggcctgc	ggatggcact	cggcagtagc	1020
cgccggcggg	taggggtggtt	ctttactgcc	gaggggtggc	tattgctcac	cacggtggtt	1080
ccgttgggtat	tgggtgtcat	attcaatatg	gtacacatgg	agattcccga	tttatacaat	1140
ctctctttca	cttgggtggcg	ctttgcggtc	agttttgggtg	gggtgctgct	gcttatggga	1200
ctgatcattg	cactgggcat	ctgggtgcct	gcccgcggg	ccatgaagtt	gcagccggcc	1260
gaagcgttgc	attatgaata	a				1281

<210> 3874

<211> 246

<212> DNA

<213> B.fragilis

<400> 3874

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gacgaagaag	ataaaatggt	aaaagagggtg	aggttaccaa	ttgggcaagt	gcaaacagat	180
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<210> 3875

<211> 990

<212> DNA

<213> B.fragilis

<400> 3875

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<210> 3876

<211> 642

<212> DNA

<213> B.fragilis

<400> 3876

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<210> 3877

<211> 864

<212> DNA

<213> B.fragilis

<400> 3877

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cacgaagtgt	catgcagcgg	attcctgttc	aacggttctt	cgcattgtctg	tcgtttcatg	360
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<210> 3878

<211> 1437

<212> DNA

<213> B.fragilis

<400> 3878

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gtgtggaaaa	gtactgacct	gacacaagca	ttcatttata	ctgcgttggc	aaatgctacg	180
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gatgtgaatg	cagaattgat	agaccgttat	tatgatgccg	gatggaataa	gtatgaagat	300
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<210> 3879

<211> 1404

<212> DNA

<213> B.fragilis

<400> 3879

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gccaatatgt	tcaataaact	gagcagcctt	cccaacgtga	ccatctatac	cggaaatggca	360
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<210> 3880

<211> 900

<212> DNA

<213> B.fragilis

<400> 3880

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<210> 3881

<211> 903

<213> B.fragilis

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<211> 471

<213> B.fragilis

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<211> 1293

<213> B.fragilis

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<210> 3884

<211> 1254

<212> DNA

<213> B.fragilis

<400> 3884

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<210> 3885

<211> 1596

<212> DNA

<213> B.fragilis

<400> 3885

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gctaccgttc	ggaactatac	gggcagtgta	ctgcttgat	cacatgatga	atatttttgc	1560
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<210> 3886

<211> 339

<212> DNA

<213> B.fragilis

<400> 3886

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cggtggggta	aggctgacgg	tctggagggt	gttcgccgaac	tgatagttga	acagaagttc	180
atgaaaatag	ctcctgatgg	aaaatctttt	gagatacttc	cgttacccat	ttaccaaaagt	240
gataatgagc	gtactttttac	caagaaacat	tattttattcc	ctgtgccgca	aggacaacgt	300
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<210> 3887

<211> 192

<212> DNA

<213> B.fragilis

<400> 3887

ggtttgttca	tagttcttct	tttattaatt	tcactaaata	atataataac	agatgaagga	60
aaatatcttc	aaatatcttc	cttcatcatt	tcaatcagta	atccgaataa	cctcaatcgt	120
tattcttatt	tcacaaaatc	cgtaatcttt	attgtccact	ctcttttcgt	accgtcggca	180
gcagtcacct	ga					192

<210> 3888

<211> 585

<212> DNA

<213> B.fragilis

<400> 3888

atagacggct	tcttcagccc	cttgggtgaag	acttatacgg	atgtgaacgg	tgatggtaaa	60
atagacggtg	aagaccaggt	acgtatcgga	aagccgacaa	tgccctcactt	tacttatgcc	120
tttgattttt	ctttgggtta	tgaaggattc	actttgtccg	gtttacttta	tgggacaggt	180
gaacgctaca	tgactttttg	caatcgttat	cagtcaggtg	aaggaaaata	cctgtattat	240
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atcagttccg	gtgtaaacgg	aaataataat	aaggcaggat	cgactttctg	gatgcggaat	360
gcatcatatc	ttcgtctgaa	ggatttgcag	ttgagctatg	acttttaaata	taaatacctg	420
aaaaaatgtg	actggtttgc	gacgtgtcgt	gtgaatctga	gtggtagtaa	tcttttcact	480
atttcaggtg	ttagcaaatt	tttcgatccg	gaaacatcaa	gtaccagcgg	cgacggctat	540
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<210> 3889

<211> 480

<212> DNA

<213> B.fragilis

<400> 3889

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atgatcattg	ccatcgtgta	ttatattaaa	atagctccta	tctatccgga	agtgaaccgt	180

tcgctgacga	tgcggatgaa	aggggtaagc	gccatgcatg	tcaaaggagg	gggaaattca	240
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gttaccgctg	taaacgaaca	ctttctgacc	cggaagggat	cttatataca	accggccggg	360
ggaggcgagc	aataccggc	tctggtaaag	tataccgata	ctaatttttt	tcggttggtc	420
gagtgtgaat	tactggatgg	gtcttcacca	cgaggctgga	aggatccgcg	gggggtgctat	480

<210> 3890

<211> 466

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (10), (11), (12), (13), (14), (15), (16)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 3890

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tcacgataca	atcgcttatc	agactataca	taccaattat	acgtacaatc	tgggtatcaa	180
agacaatccg	ttatcacact	ccgtaggtgc	gatcaatccc	gacgactaca	atgtatatcc	240
agtagaaatg	tatccggaca	gcattgcatt	ctatatcaat	gacacacata	ctttcaccta	300
tccccgcata	gaaacagaca	aagaagggca	gtttcctttc	gatcagcctt	tctatctact	360
gacgcacatg	cagttgggtg	gctcgtgggt	aggggctgta	gacccgaaag	aacttccggt	420
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<210> 3891

<211> 216

<212> DNA

<213> B.fragilis

<400> 3891

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atcgaacccg	gaacacagtt	tgaagatatt	cctgatgatt	gggtatgccc	tctgtgtgga	180
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<210> 3892

<211> 1272

<212> DNA

<213> B.fragilis

<400> 3892

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gagatctatc	agttcgggaa	taaagtagat	gcccggctcc	acggtatgta	caaaaccgga	180
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gttatagccc	accagagtt	caccagatt	ctccatgtca	tgcacgtcga	gccccatcat	300
gtgtcccagc	ccgtgaggat	agaacaaagc	atgtgcaccc	tgcgcacag	cgtcttcggc	360
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agcgatggta	gcaaacgaaa	ggtcaccccc	tgcggcatgc	gccacggcct	ccatggctgc	720
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ctgtcccttc	tgtaccgect	tgtgcagata	gctcacaatg	tcggccgaag	gcatggtgat	1020
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atgatcgatg	gtcagttcat	caccgaatat	aatttcctta	tcttcatcaa	tgtcgattat	1140
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gcggaacgta	ttgtcctcgt	agttcaatcc	acactcgtcg	tttcccagaa	acaacagtac	1260
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<210> 3893

<211> 201

<212> DNA

<213> B.fragilis

<400> 3893

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gaagtggctt	tgctgccgtt	tggtccgcag	gagaaagcag	aaaacaggat	gaaagctgac	120
agtatgaaca	tagagtttct	tttcataatt	atgcttttgg	agtttaaagc	ctcaaaatta	180
atgattttca	ctgtaggggtg	a				201

<210> 3894

<211> 213

<212> DNA

<213> B.fragilis

<400> 3894

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atcatcaaac	aggaagaaga	aaatgcatac	aagacgcata	taacatgcaa	taagatgcaa	180
catcgaccga	agattttccaa	taaatatgca	tga			213

<210> 3895

<211> 789

<212> DNA

<213> B.fragilis

<400> 3895

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cgggtttcgg	agttgacatt	ggctccttcg	atgctgcttt	ccatggcagt	gatgtttttt	180
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acaatcaggg	atgtgacggg	tacgactccc	tattatctat	tgatagcagt	ggcggctatg	720
gtgttcgtag	gctgttttct	tcggataaag	caggttacgg	ttccgggaac	gtggcgga	780
gatgaatga						789

<210> 3896

<211> 423

<212> DNA

<213> B.fragilis

<400> 3896

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agaggccatg	atgttctctca	agcagaagat	ggacgccgca	caaggcttca	tcgacgccgt	180

gaagcaacgc	cagaatacat	tgatgaccac	catgcaggcc	atcatcgacc	tgcaacgccc	240
cttcttctc	gaaggcgacg	agtcattgct	ccgcccgatg	attctgaagg	acgtggcgga	300
acgcaccggg	ctggacatct	cgaccatctc	acgcgtcagc	aacagcaaat	acgtgcaaac	360
gaattacggc	atttatcccc	tgaagttctt	cttcagcgac	ggatacacca	ccgaagacgg	420
tga						423

<210> 3897

<211> 654

<212> DNA

<213> B.fragilis

<400> 3897

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ttctgttatt	cggtgtttta	tatggggcgt	gatttcgggc	atggcctttc	cgaagggatg	120
aagataagtc	attccggtaa	tcaaagtgtg	gaacaggcta	tcaactttcg	gattgccaca	180
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gagacaagca	tagattctgt	gatgctggtc	attctgggac	tggtttcact	aattgtaggc	600
gaggtattcg	ccatcggggt	gaagatgaaa	gaagaacaag	atcttactat	ctga	654

<210> 3898

<211> 915

<212> DNA

<213> B.fragilis

<400> 3898

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cttactcctg	tcatgggaga	tcatgtccga	agttcatggg	gctcgtatgc	cggtgccacc	180
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<210> 3899

<211> 195

<212> DNA

<213> B.fragilis

<400> 3899

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atgatggcaa	agataggaac	aaaggatgaa	ttgacaaagg	agataaagca	aataagattc	180
acagcagagc	aataa					195

<210> 3900

<211> 1833
 <212> DNA
 <213> B.fragilis

<400> 3900

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cttttcaatc	accattaccg	ttgcactttt	catgctataa	ccgccaccga	taatcaccgg	180
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<210> 3901
 <211> 1941
 <212> DNA
 <213> B.fragilis

<400> 3901

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<210> 3902

<211> 567

<212> DNA

<213> B.fragilis

<400> 3902						
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<210> 3903

<211> 474

<212> DNA

<213> B.fragilis

<400> 3903						
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gacttagtgc	tgagtcgttg	tgcgtaaac	cgaagcgtct	cattaacaaa	tacaaatgat	420
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<210> 3904

<211> 645

<212> DNA

<213> B.fragilis

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<210> 3905

<211> 1839

<212> DNA

<213> B.fragilis

<400> 3905

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<210> 3906

<211> 1680

<212> DNA

<213> B.fragilis

<400> 3906

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<210> 3907

<211> 1002

<212> DNA

<213> B.fragilis

<400> 3907

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<210> 3908

<211> 558

<212> DNA

<213> B.fragilis

<400> 3908

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<210> 3909

<211> 1581

<212> DNA

<213> B.fragilis

<400> 3909

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<210> 3910

<211> 1689

<212> DNA

<213> B.fragilis

<400> 3910

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<210> 3911

<211> 1728

<212> DNA

<213> B.fragilis

<400> 3911

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gaagccatt	tctgcaaaag	tactgttggg	aaaactggaa	tccttaaaaa	agatttaaga	1680
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<210> 3912

<211> 273

<212> DNA

<213> B.fragilis

<400> 3912

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aatagattaa	gttcgtcctg	tgaagttctg	tatcactctg	tggtgagtta	tggtataccc	180
ccgttctgca	ggtcacgctc	cgtagagctc	ctctcctgtg	cctctctgcc	tatgcagctc	240
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<210> 3913

<211> 1548

<212> DNA

<213> B.fragilis

<400> 3913

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<210> 3914

<211> 1491

<212> DNA

<213> B.fragilis

<400> 3914

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<210> 3915
 <211> 243
 <212> DNA
 <213> B.fragilis

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aaaacgggaa aggccaaaagc gattcgtttc tctacccttg aggcgatctg tagagtgcta 180
gattgccagc cgggggatat tctggagtat caggtggatg aagaagatgg aggtacgtca 240
taa 243

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<210> 3916
 <211> 1473
 <212> DNA
 <213> B.fragilis

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<400> 3916
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<210> 3917
 <211> 675
 <212> DNA
 <213> B.fragilis

<400> 3917

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<210> 3918

<211> 1170

<212> DNA

<213> B.fragilis

<400> 3918

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accgtgaatg	acaatatgga	tgccatcgac	cgctctacac	tcaaagctgt	gggacaaacg	1140
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<210> 3919

<211> 1047

<212> DNA

<213> B.fragilis

<400> 3919

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<210> 3920

<211> 438

<212> DNA

<213> B.fragilis

<400> 3920

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<210> 3921

<211> 393

<212> DNA

<213> B.fragilis

<400> 3921

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<210> 3922

<211> 543

<212> DNA

<213> B.fragilis

<400> 3922

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<210> 3923

<211> 708

<212> DNA

<213> B.fragilis

<400> 3923

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<210> 3924

<211> 693

<212> DNA

<213> B.fragilis

<400> 3924

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<210> 3925

<211> 438

<212> DNA

<213> B.fragilis

<400> 3925

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<210> 3926

<211> 1698

<212> DNA

<213> B.fragilis

<400> 3926

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<211> 1656

<212> DNA

<213> B. fragilis

<400> 3927

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 <212> DNA
 <213> B.fragilis

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 <213> B.fragilis

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<210> 3931
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 <212> DNA

<213> B.fragilis

<400> 3931

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<210> 3932

<211> 1410

<212> DNA

<213> B.fragilis

<400> 3932

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<210> 3933

<211> 2142

<212> DNA

<213> B.fragilis

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<211> 1863

<212> DNA

<213> B.fragilis

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<211> 225

<212> DNA

<213> B.fragilis

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<210> 3936

<211> 510

<212> DNA

<213> B.fragilis

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<210> 3937

<211> 1176

<212> DNA

<213> B.fragilis

<400> 3937

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gcaaaagacc	gtatcactac	agagtttcaa	ggtaccagca	ctaagtttga	aatgatgac	1140
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<210> 3938

<211> 504
 <212> DNA
 <213> B.fragilis

<400> 3938
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 <212> DNA
 <213> B.fragilis

<400> 3939
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 taa 183

<210> 3940
 <211> 207
 <212> DNA
 <213> B.fragilis

<400> 3940
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<210> 3941
 <211> 999
 <212> DNA
 <213> B.fragilis

<400> 3941
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 cagttttaccg atgttcatta tatctataat gatcctcggt cggatgtatc gatcgaacgt 180
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999

<210> 3942

<211> 774

<212> DNA

<213> B.fragilis

<400> 3942

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ttgtctttgc	gtgtagaacg	gcatgtggcc	aatgctttga	aggttattga	ttttctgggtg	420
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<210> 3943

<211> 195

<212> DNA

<213> B.fragilis

<400> 3943

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<210> 3944

<211> 183

<212> DNA

<213> B.fragilis

<400> 3944

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<210> 3945

<211> 1338

<212> DNA

<213> B.fragilis

<400> 3945

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ctactcggcc	tgctcaccac	agtcagtgcg	caaccgacac	accgaataaa	gggaactgtg	180
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<210> 3946

<211> 705

<212> DNA

<213> B.fragilis

<400> 3946

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ccgctggggc	ctgtaggtgt	cctttgtatt	cagcgtactt	tgaacaaagg	gcgttggtat	180
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aatttgcggg	gtatctggat	tttgaaccgg	gtgattggca	gtatcgtgat	ggcagtatcc	660
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<210> 3947

<211> 312

<212> DNA

<213> B.fragilis

<400> 3947

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gaaacgtttg	gtaagagcga	gtatagaaag	aatttgcctt	atatcatcgt	ccgtactaaa	180
agtacaggta	aaacggctct	tttgaggttg	tgcacccgaa	ataatgaaat	gaacatcaaa	240
atgtttttca	agacactgca	ctattttcctg	aagtgtggcc	tgttcgaatt	tcagttttcc	300
gttaatccat	ag					312

<210> 3948

<211> 321

<212> DNA

<213> B.fragilis

<400> 3948

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cccgttacgg	acacagaaag	aaagtatgtg	tacggaatac	ttggcattgc	caaattgttc	180
gggtgcagtc	tgccctaccgc	caaccgtata	aagaaaagcg	gaaagataga	caaagccatt	240
acgcaaatag	ggcgcaagat	tatcgtggat	gcggaacttg	cccttgaact	ggctggaaag	300
aaaaccggag	gacgaaaata	a				321

<210> 3949
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 <212> DNA
 <213> B.fragilis

<400> 3949
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 caattttacgc aggaacttac tgcgcaata caatccgctg attgtcaatc tttagaaatt 480
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<210> 3950
 <211> 807
 <212> DNA
 <213> B.fragilis

<400> 3950
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 ggggtgtagt acaatacttc gactaaatat ctgaagaact ttaaaaagat tatccttctt 180
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 gcaattttct cgttggtcca ggtgcgtgat acttttattt tttgttgctt taccgggctg 360
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 aaggacaatt ttgagatggc gaattga 807

<210> 3951
 <211> 228
 <212> DNA
 <213> B.fragilis

<400> 3951
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ataggagaaa	agacagaaga	tgaaaatagc	gcaacaactc	aaggagaaga	acattgccga	180
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<210> 3952

<211> 996

<212> DNA

<213> B.fragilis

<400> 3952

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<210> 3953

<211> 189

<212> DNA

<213> B.fragilis

<400> 3953

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<210> 3954

<211> 1296

<212> DNA

<213> B.fragilis

<400> 3954

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cctgccaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
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<210> 3955

<211> 2241

<212> DNA

<213> B.fragilis

<400> 3955

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<212> DNA

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<212> DNA

<213> B.fragilis

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<211> 1065

<212> DNA

<213> B.fragilis

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<213> B.fragilis

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<211> 1539

<212> DNA

<213> B.fragilis

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<210> 3966

<211> 1581

<212> DNA

<213> B.fragilis

<400> 3966

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<210> 3967

<211> 849

<212> DNA

<213> B.fragilis

<400> 3967

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<210> 3968

<211> 2625

<212> DNA

<213> B.fragilis

<400> 3968

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<211> 288
<212> DNA
<213> B.fragilis

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tataggttgc ccttatgtaa tgaatgtgtg aaaaatgaaa tttattgtgc tttgacacta 240
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<210> 3970
<211> 195
<212> DNA
<213> B.fragilis

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catttatattc tgatttctac tttttttgat ttcttggaat taatatttat ttgtattttt 180
gatctatata tataa 195

<210> 3971
<211> 969
<212> DNA
<213> B.fragilis

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<210> 3972
<211> 321
<212> DNA
<213> B.fragilis

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ctagcggaga gacagggatt cgaaccccg gtacctcgca gtacaacggt tttcaagacc 180

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gccgcaatcg accactctgc cacctctcca gaactacggt taagtagtgc ttttctctta 240
aagcgctgca aaggtagcaa tcatttttta acttgcaa at tattccgcaa aaaaatatta 300
gaaaagtata ttggaagta a 321

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<210> 3973
<211> 561
<212> DNA
<213> B.fragilis

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ggagaggttaa aactggaata a 561

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<210> 3974
<211> 219
<212> DNA
<213> B.fragilis

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<400> 3974
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<210> 3975
<211> 252
<212> DNA
<213> B.fragilis

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<400> 3975
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ctgagaaact cacacctttt ggaggaattt ttcaatcat ggagaaattt gactccatgc 180
tttcaccctg tatcgactca acactgggtc agagatgcag cagtatcttc ggatatcagt 240
tcagcgagat ag 252

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<210> 3976
<211> 198
<212> DNA
<213> B.fragilis

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<400> 3976
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cctgtctctc cgctgaaaac aaaaaaaca agttataagt ccttgaattt caataattca 180
aggactttct ttttttag 198

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<210> 3977
<211> 933
<212> DNA
<213> B.fragilis

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<400> 3977

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<210> 3978

<211> 1077

<212> DNA

<213> B.fragilis

<400> 3978

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<210> 3979

<211> 927

<212> DNA

<213> B.fragilis

<400> 3979

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<210> 3980

<211> 498

<212> DNA

<213> B.fragilis

<400> 3980

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<210> 3981

<211> 1599

<212> DNA

<213> B.fragilis

<400> 3981

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<210> 3982

<211> 774
 <212> DNA
 <213> B.fragilis

<400> 3982
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 tgtcctccgg gtggaatatt ggccatcggc acaatgaaga ttcccaatgc ggacactcca 180
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<210> 3983
 <211> 1254
 <212> DNA
 <213> B.fragilis

<400> 3983
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 gtactttcac cgagtcagtt tcctgagttg ctcgatcata aggggtgagga tctgattggt 420
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<210> 3984
 <211> 1020
 <212> DNA
 <213> B.fragilis

<400> 3984
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 gtttttgactg atagcatttc tcggatagta tcagcttgct ctggtgaaat tggagtggca 240
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tcacttgata	ccttagtaaa	gatagatagg	aatagacttg	attcaaagac	ttggagtcct	420
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acagaagagg	aaatgtcggc	tgaccacgat	agggcttact	ttaattatac	atctcctctt	660
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<210> 3985

<211> 561

<212> DNA

<213> B.fragilis

<400> 3985

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aagaagattt	tgtctattct	tgtattggcc	attgcagccg	tccaatttgc	atttgcaggt	180
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<210> 3986

<211> 495

<212> DNA

<213> B.fragilis

<400> 3986

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<210> 3987

<211> 2310

<212> DNA

<213> B.fragilis

<400> 3987

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aaacagttta	cgggttttagt	actcagtatt	cttatttcttg	aagatataact	tgccattgtt	540
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<210> 3988

<211> 906

<212> DNA

<213> B.fragilis

<400> 3988

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<210> 3989

<211> 1188

<212> DNA

<213> B.fragilis

<400> 3989

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<210> 3990

<211> 741

<212> DNA

<213> B.fragilis

<400> 3990

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<210> 3991

<211> 1074

<212> DNA

<213> B.fragilis

<400> 3991

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<210> 3992

<211> 573

<212> DNA

<213> B.fragilis

<400> 3992

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<210> 3993

<211> 201

<212> DNA

<213> B.fragilis

<400> 3993

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tcttatacac	gcattctatt	tccgacggcc	ttcaatctag	gctgctcacg	tggagttcac	180
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<210> 3994

<211> 1125

<212> DNA

<213> B.fragilis

<400> 3994

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<210> 3995

<211> 1272

<212> DNA

<213> B.fragilis

<400> 3995

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<210> 3996

<211> 1041

<212> DNA

<213> B.fragilis

<400> 3996

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ggtacaatgg	ttccgggagg	atatgatgca	atcgttaatg	agatagtgcg	cttgcaaccc	180
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<211> 837
 <212> DNA
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 aacggaaata ccgccattta tatcttagga agtgcgggat atgccaccga atgtacttac 360
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 aatgcatacg atgaaacaaa aacagacacg agaaccatcg gcatcaccat agaataa 837

<210> 3998
 <211> 231
 <212> DNA
 <213> B.fragilis

<400> 3998
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<210> 3999
 <211> 336
 <212> DNA
 <213> B.fragilis

<400> 3999
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 atgcagcccc ttgtagaaga attcaagaaa cttatggaag ggactctcga ggtagtacag 180
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<210> 4000
 <211> 876
 <212> DNA
 <213> B.fragilis

<400> 4000
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aaaacaaaga	taaaagatac	atttggcatt	gagatcccgc	attgggagga	gagcctgaaa	840
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<210> 4001

<211> 1122

<212> DNA

<213> B.fragilis

<400> 4001

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<210> 4002

<211> 1740

<212> DNA

<213> B.fragilis

<400> 4002

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<210> 4003

<211> 1056

<212> DNA

<213> B.fragilis

<400> 4003

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cataggtttc	cgttgaacga	aatagaggaa	gcttatcgta	tctttgaaaa	caagctggag	1020
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<210> 4004

<211> 438

<212> DNA

<213> B.fragilis

<400> 4004

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<210> 4005

<211> 831

<212> DNA

<213> B.fragilis

<400> 4005

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<210> 4006

<211> 405

<212> DNA

<213> B.fragilis

<400> 4006

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<210> 4007

<211> 486

<212> DNA

<213> B.fragilis

<400> 4007

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<210> 4008

<211> 996

<212> DNA

<213> B.fragilis

<400> 4008

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<210> 4009

<211> 195

<212> DNA

<213> B.fragilis

<400> 4009

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<210> 4010

<211> 2418

<212> DNA

<213> B.fragilis

<400> 4010

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<210> 4011

<211> 2775

<212> DNA

<213> B.fragilis

<400> 4011

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2775

<210> 4012

<211> 1035

<212> DNA

<213> B.fragilis

<400> 4012

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<210> 4013

<211> 348

<212> DNA

<213> B.fragilis

<400> 4013

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<210> 4014

<211> 333

<212> DNA

<213> B.fragilis

<400> 4014

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<210> 4015

<211> 186

<212> DNA

<213> B.fragilis

<400> 4015

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cgcacattca	gcacaacagc	ctttcaagac	ataatttata	cttcgtacag	caaatccctc	180
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<210> 4016

<211> 522

<212> DNA

<213> B.fragilis

<400> 4016

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<210> 4017

<211> 645

<212> DNA

<213> B.fragilis

<400> 4017

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<210> 4018

<211> 1017

<212> DNA

<213> B.fragilis

<400> 4018

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414

<210> 4022

<211> 984

<212> DNA

<213> B.fragilis

<400> 4022

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<210> 4023

<211> 636

<212> DNA

<213> B.fragilis

<400> 4023

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<210> 4024

<211> 906

<212> DNA

<213> B.fragilis

<400> 4024

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<210> 4025

<211> 1068

<212> DNA

<213> B.fragilis

<400> 4025

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<210> 4026

<211> 510

<212> DNA

<213> B.fragilis

<400> 4026

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<210> 4027

<211> 576

<212> DNA

<213> B.fragilis

<400> 4027

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<210> 4028

<211> 1203

<212> DNA

<213> B.fragilis

<400> 4028

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<211> 1338

<212> DNA

<213> B.fragilis

<400> 4029

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<211> 1014

<212> DNA

<213> B.fragilis

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<211> 1218

<212> DNA

<213> B.fragilis

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<211> 753
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 <213> B.fragilis

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<210> 4033
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 <212> DNA
 <213> B.fragilis

<400> 4033
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 <211> 1539
 <212> DNA

<213> B.fragilis

<400> 4034

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<210> 4035

<211> 1011

<212> DNA

<213> B.fragilis

<400> 4035

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<210> 4036

<211> 2040

<212> DNA

<213> B.fragilis

<400> 4036

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<210> 4037

<211> 516

<212> DNA

<213> B.fragilis

<400> 4037

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<210> 4038

<211> 1269

<212> DNA

<213> B.fragilis

<400> 4038

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<210> 4039

<211> 1557

<212> DNA

<213> B.fragilis

<400> 4039

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<211> 447

<212> DNA

<213> B.fragilis

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<210> 4041
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 <212> DNA
 <213> B.fragilis

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 taa 1143

<210> 4042
 <211> 273
 <212> DNA
 <213> B.fragilis

<400> 4042
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<210> 4043
 <211> 570
 <212> DNA
 <213> B.fragilis

<400> 4043
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 cttcgttatg ccggagacag ggacatggca caagacttgg tacacgacgg tttcctgaag 180

atttttcgact	ccttcgacaa	gtttacctgg	cgggggtgaag	gctctctgag	agcatggatg	240
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accacggcac	tggatgaagt	tcccgaacg	tatgaagaac	cggatgcttc	ggctgttgaa	360
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gtattcaatt	tatacacctt	tgaagataag	tgcacaaagg	aaatcgacac	gatgttgggg	480
attaatgaaa	aatcttctgc	ctcacagctt	tttcgcgcaa	aaagtgtatt	ggcaaagaaa	540
gtgaaagaat	ggttggtgac	caatgggtga				570

<210> 4044

<211> 726

<212> DNA

<213> B.fragilis

<400> 4044

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gaagccaaaag	gagggacacg	aaccgaccct	gaggaaatag	ttcgcatggc	cgtcagtcag	180
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gcaaaaatcgc	ttatcccaact	ttttaaaaga	ctaaagggaag	caggaatcca	tatttgcctt	300
gataccaatg	gcgggctatg	gaacaatgat	gtagagggaac	tattggaatt	gactgatctg	360
gttttattag	atatcaaaga	atttaatccg	gaacatcatc	agtctttaac	cggagaagac	420
aacgagcaga	ccctgaaaac	cgcagcctgg	cttgaaacca	atcataaacc	attctgggtg	480
cgatacgtat	tagtgccccg	ctacagtgc	ttcgaagacg	atatccggca	gctgggagag	540
catcttggaa	cgtaccagat	gattcagcgt	gtagaaatat	tgccttacca	caccttgggt	600
gttcacaaat	atgaagcaat	gaacaaagaa	tatatgctga	aaggagtga	agagaatact	660
ccggagcaga	tagaaaaggc	tgaaaaacta	ttcaggcaat	atttccggac	cgtacaagtg	720
aattga						726

<210> 4045

<211> 1164

<212> DNA

<213> B.fragilis

<400> 4045

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aagacagctg	aagaacgtct	aaaatttatg	gatgaagata	ggtatgaaga	aatgatcaca	180
aagtgggcat	atttttgttt	gaaggaagat	tcaaataaga	aatatgagga	tgtctttcga	240
tatggtggta	gtggcgatgg	tggtattgat	gttattgctt	tctatgattt	caaaaatcaa	300
atttgcgaca	tttatcaatg	taaacattat	aaagattcaa	taggttattc	cgatattaat	360
aaagaattat	gcaaattctt	gtataatata	ttcatcgatt	atataccatt	ccctaaaaca	420
tactatcttg	ttgcacccca	aaatataacg	ggtcctttag	gaagtttgtt	taatgatcat	480
gaaaaactaa	ggaatagatt	atgggaagat	tgggaaaaaa	gtataaagaa	aaaattggca	540
gtaaatatta	ctaagtatga	gaacgataaa	tttaagaagc	atgtagatac	atttgatctt	600
tcaataataa	agccctatc	tccagacaaa	attattgaag	ggttaagaaa	agaatattgg	660
ttatatttcc	aatatctagg	aattgataga	actttgatac	caaggatcca	cgctgcccc	720
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gctgtaacaa	agagtgcac	tcaatatcag	gtagaagaga	tgaattccgt	taaaccaatt	1080
attagctcaa	gagtattaaa	aggtatgtgt	tttcaattat	caaatgagaa	taaattgata	1140
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<210> 4046

<211> 408

<212> DNA

<213> B.fragilis

<400> 4046

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ctttggccgc	gcggaatgaa	aaaagaacat	ttaaagtatg	actattgggc	aaaggaactg	180
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tttgacagat	tgtatcgaaa	agaacttgaa	acttctgata	aaacgtccga	gtttttatcc	300
cggatacgtat	cctgtgaatc	agtgactcct	ttgtatgctt	cgaaggagcc	ggttttataat	360
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<210> 4047

<211> 1047

<212> DNA

<213> B.fragilis

<400> 4047

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ttcagtcoga	tgattgtcgg	aatcattttg	ggcatgttgt	atgctaacag	tctccgaaac	180
aatcttctcg	agacgtgggt	accgggtata	cagttctggt	caaaacgtat	tttacggata	240
ggcattatcc	tctatgggtt	taagttgact	tttcaggatg	tattggcggg	ggggctgccc	300
gcgataattg	ttgatactat	tgtagtaacc	ataacgattc	ttggagggtat	cttaatcggt	360
cgtatgctta	aaatggatcg	tggagtggcg	ttacttactt	ctatcggtag	tggaaattgt	420
ggtgcagcgg	ctatttttagg	ggccgaatcg	accattcaga	caaaaccata	taaaacggcg	480
gttgctgttt	ctactgtagt	tattttcgga	actttgtcca	tgtttatcta	tcctatatta	540
tatagaaatg	gaacttttgt	gctttcaccc	aacgagatgg	ggatattttac	cggtgctacg	600
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agttttatgg	tatccagggc	tgccgtgaaa	gctggtgggc	aaggaggtag	tatgaaggac	780
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gcaatgactg	cattaggtgc	ggaaaccagt	atcgacaaat	ttaagaaagc	tggtgccaaag	960
ccatttgtac	ttgcttcttt	gctgtattta	tggctaattg	tcggaggata	tttttttgga	1020
aaactccttg	ctcctgtctt	aatgttaa				1047

<210> 4048

<211> 1056

<212> DNA

<213> B.fragilis

<400> 4048

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ttcatcacccg	acttttacag	acagcacaaat	gatacaaaagg	cttttgaagc	cgctatcctt	180
gaactggtac	ttgacaagca	gaaagaacaa	tacacattga	ttctcaatag	tctgaaaatc	240
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cgtgtgtgtt	ttcactacgc	agacaggcat	aattctgcaa	ttaaagacca	gttggagatt	360
accaccaagt	tgcacgagcc	tttgaatgac	gcataccaca	gatatgattt	cattggtttt	420
cgggagcata	cggacgaaga	agaaatacag	gcagaaaagg	aatatgaacg	ctgcaaggct	480
gaatacgaca	aggaaaagaa	agaattggat	aaactttatg	aactgcaaaa	gcaagacagg	540
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tttatggaag	tcctaaaaaa	gtaccttcct	aatgataggg	aagaaaaaca	gcaggatgaa	660
ccagtcaagc	aaaacgaaca	agaagaagta	cagaatagcc	cggagggaca	acatgaatat	720
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tccaagcaat	acaggatga	atggagaagc	caaataattaa	aattgttgga	tattgacgag	960
agctattaca	ggtcgaaata	caaagaacct	gtttccgatt	ttccgagtga	cagcaaccag	1020
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<210> 4049
 <211> 192
 <212> DNA
 <213> B.fragilis

<400> 4049
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 gttgtcgtca tttgtgaaat ttacaccaat ggctggttgt tttttaaaga gacaataaac 180
 ggtaatggct ga 192

<210> 4050
 <211> 570
 <212> DNA
 <213> B.fragilis

<400> 4050
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 gatagcaccg atgcacatgg agtgcagcgc atgacggccc gtaagagcga ggtagatatt 180
 aaatataaaag gcaaagagta ccattcgttt atttcccgta cgcccaatga ttcgcttccc 240
 cgggtggttaa gccagatggg gaatacgtat gtcgacaatc agatagtgc ttaggtgacg 300
 cgtggaaacg aacgtgtttt cagccgtact tttaccaaaa agcagttcga gtctctgata 360
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 tccatcacga tctcaccgga tggaaaaata agtatgaaga aagaagagct tctggaagag 540
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<210> 4051
 <211> 1104
 <212> DNA
 <213> B.fragilis

<400> 4051
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 gaacacctta cagtttgtaa cagtgtcggg gtttttgatg tgtcacacat gggcgaattt 180
 tgggtgaaag gtctctcatg gttggatttt ttgcagaaag tgacttcaaa taatgtggca 240
 gctttggtgc cgggtaaaat tcaatatact tgttttccaa atgaagacgg gggtatcgtt 300
 gatgacttac tggctctatca atatgaactg gaaaaatatc ttttggttgt taatgcttcg 360
 aatatagaga aggactggaa ctggtgcatt tctcacaata cggaagggtgc tgagttggaa 420
 aactcttcag ataatatggc acaacttgct gtacaaggtc cgaaagccat tcaagctctg 480
 caaaaattga cggatattaa tcttgccgat attccttatt atacatttaa agtcggtgag 540
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 gaactatatt tttatccgga tgctgccatg aagatttggg atgcagtttt tgaagccgga 660
 gctgagtttg gcataaaacc gatagggtt ggtgcgcgtg atactcttcg tcttgaaatg 720
 ggattctgtc tgtacggtaa tgacttggac gatactacgt ctctattga agccggactg 780
 ggatggatca ctaaatattg ggacggcaag aactttacaa atcgttcgat gcttgaaaaa 840
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 cctcgtcatg gttacgagtt gacaacagcg gaaggtgata aaatcggggt agtaacatca 960
 ggtacaatgt ctctatttcg taagattggg attggtatgg gatacgtgaa acctgaatat 1020
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<210> 4052
 <211> 222
 <212> DNA
 <213> B.fragilis

<220>

<221> unsure

<222> (198), (199), (200), (201), (203), (204), (205), (206), (208), (213), (216)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4052

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cgtcaattga	aatatcgccg	gcgctcgtgta	gaagttcctg	ccattcgtct	tcaccagggg	180
tgcaaaggcc	ctcaggggnn	ngnnnntnca	aangngttc	ta		222

<210> 4053

<211> 1905

<212> DNA

<213> B.fragilis

<400> 4053

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cccagcgagg	agcaaatagc	cgtcaaaaag	cggtattatg	actctatagc	cgtgggtacag	180
cagcaagaag	aagcactgag	agccaaaacc	gaagctgcgc	tggctaacga	aaaagaagaa	240
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ccgaaacaga	tgaagaagac	cggatttgcc	gcacgcctgg	aagctatgca	aaaacaacag	1860
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<210> 4054

<211> 576

<212> DNA

<213> B.fragilis

<400> 4054

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caccggtctc	cctgcctgat	ggaactaaat	gtaaaccgaa	acaacaaagc	gctgcacttt	480
tacgaacata	aagggatgaa	gaaattgcgg	gaaggagact	tccttatcgg	aaacggatat	540
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<210> 4055

<211> 432

<212> DNA

<213> B.fragilis

<400> 4055

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gataaggcct	ataaattaga	gttggccgca	ccagggatga	ctaaggagga	tttcagcgta	180
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gaaaagaaaag	acggtcgcta	tttacgcctg	gaattttcat	attctaaatt	ccagcagaca	300
atgattctgc	cggagaacgt	agataaagat	cacatctccg	cgcaagtgga	aaacgggtgc	360
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<210> 4056

<211> 342

<212> DNA

<213> B.fragilis

<400> 4056

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gaagtcggga	tactcgatat	gcagatttat	atccacgaac	atacactctt	tatgattgtc	180
gatacggtag	atgaattcga	ttggataaaa	gataacgagc	gcttggctaa	acttccccgg	240
caggcagaat	gggaggctta	tatgtctcgc	tttcagcggt	cattgcccgg	acaagcgta	300
catgagaagt	ggaaaatgat	ggaacgtata	tttaaactct	ga		342

<210> 4057

<211> 1317

<212> DNA

<213> B.fragilis

<400> 4057

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ccgttctatc	gtaaaaaaat	gcaagagttg	ggcatcacac	ccgatgatat	taacgggata	180
gaagatatat	ccaaattacc	atttaccact	aaattagatt	tacgcgacaa	ttatccgttt	240
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gtcaatgtat	tcccgaacac	gatagaatct	gttattctgg	aatggcgga	attcgagcca	1080
cattatctgt	tgaccattga	ccgcaagaac	aatacggata	ctatggaact	gaaggttgag	1140
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<211> 3102

<212> DNA

<213> B.fragilis

<400> 4058

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<211> 2214

<212> DNA

<213> B.fragilis

<400> 4059

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<211> 1671

<212> DNA

<213> B.fragilis

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<210> 4061

<211> 621

<212> DNA

<213> B.fragilis

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<211> 570

<212> DNA

<213> B.fragilis

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<210> 4063

<211> 1431

<212> DNA

<213> B.fragilis

<400> 4063

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<211> 339

<212> DNA

<213> B.fragilis

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<211> 1359

<212> DNA

<213> B.fragilis

<400> 4065

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<211> 1230

<212> DNA

<213> B.fragilis

<400> 4068

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<210> 4069

<211> 429

<212> DNA

<213> B.fragilis

<400> 4069

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caaaagtcca	aattacgtca	ggatgggctt	tccttgctaa	aatatgttca	gaaagaaagc	360
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<210> 4070

<211> 519

<212> DNA

<213> B.fragilis

<400> 4070

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cgtcaattga	aatatcgccg	gcgtcgtgta	gaagttcctg	ccattcgtaa	tcttattttt	180
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tttatgtttg	tcatgaatct	cgatcctgct	gctgttatcc	tcaacgatga	ttgtttcgca	360
gttggcacca	aagtacaagt	catcaaggga	gatttttgtg	gagttgaagg	tgaactggcc	420
agtcttttcta	atcgtactta	tgtcactatc	cgaattcgtg	gcgtttttatc	tgccagtgtc	480
aaggttccta	aaagctacct	tcgcattctc	gcaccgtaa			519

<210> 4071

<211> 1104

<212> DNA

<213> B.fragilis

<400> 4071

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atcactacag	aagtgaaaaa	tgtacgagtg	ggcgtactcg	atccgtcaaa	tgacatcgtc	180
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gatgcaacgg	atccgaatat	ggctaccaca	caagccggct	atgccacagg	agtgattgct	420
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aagaaattca	aaaacagggt	atga				1104

<210> 4072

<211> 540

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (90), (130), (276), (291), (343)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4072

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ctgtatttgc	aaaatatgcc	gaaaccgggg	aagctggctg	ctgtgggtaa	ccctctttta	240
aaggtggcag	atatcgatca	gatgtatctt	cgtgcntata	tcacttccga	ncagctttca	300
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gaatatccgg	gtgtcgtgac	atggatttca	gatcgttcgg	agtttactcc	taaaacgatt	420
ctgacaaaag	aagaacgtgc	caatctggtg	tatgccgtta	agatagcggg	aaagaacgaa	480
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<210> 4073

<211> 354

<212> DNA

<213> B.fragilis

<400> 4073

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gagaaaaaag	aacgaacagt	tattcatctt	tatataaaaag	agaatgacac	tcaccactat	180
tttggctcaa	ttgccaatgt	atttgaatac	ttttcacccg	aagaacttgg	aataacttac	240
ggctcggtta	gaaatttatgg	acttttcta	gaaaattcat	accaaaatag	caaattgtatc	300
attaggaaag	gaatacttct	atcaaagtcg	ggaaaatagg	gtaaaaatag	atag	354

<210> 4074

<211> 282

<212> DNA

<213> B.fragilis

<400> 4074

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tttgaacgac	aaacagtcac	atgtttgccg	gcatataagc	acgcctttat	tcaacttgca	180
ctatcgagcc	gggggaaggc	ggttctcagt	tcgatctgta	ttgttctgag	agataatgca	240
cgttccaata	aaacagctga	attgttgtat	agattcattt	ga		282

<210> 4075

<211> 351

<212> DNA

<213> B.fragilis

<400> 4075

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attgaacagt	taaaagagaa	attaaagagt	ggaaaaattg	tcaaatttac	ctatttgaaa	180
agtaacgggtg	aagttcgtgt	ggcatttggc	actacccatc	ccgattttgt	gaaggataag	240
gtttgtgggt	ggggcgcaag	tcgtgaaagt	tatgctacta	ctgcgtattt	cgacttagaa	300
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<210> 4076

<211> 1275

<212> DNA

<213> B.fragilis

<400> 4076

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gataaaatta	tgggtctataa	cggcaaacag	tgtttgctgt	ttgacaaaga	aaccggaaag	300
tttatttgtt	ctgtagggca	cagaggagac	gatcctgaag	cttatagcag	tacttgcgga	360
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gataaaggta	attacataga	tacgatccc	aatatcattc	ccgaattagg	aacaggacag	660
gttggagaca	tcaacaacat	ttcggtagcg	aagggattcg	gactgttaga	aggcattatt	720
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gttgatgact	tgacccattt	tatgcctttt	actcccagct	ttcttaata	aaaaggtgaa	1140
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<210> 4077

<211> 1458

<212> DNA

<213> B.fragilis

<400> 4077

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ctgaattata	aatggtaa					1458

<210> 4078

<211> 1344

<212> DNA

<213> B.fragilis

<400> 4078

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cgtgtgggcg	aagtcgaact	gggagcctcg	gccattgccc	gtgtatacta	tctggctatt	180
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gaacagcaat	accaggctat	cgggcccac	ttttatcagg	gtgtctactt	tctgctttca	300
ctcgagtg	tagcattcac	tcttctcg	tgcttctcac	cgcacatact	gaaaaagg	360
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<210> 4079

<211> 453

<212> DNA

<213> B.fragilis

<400> 4079

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aataaatcag	gccgactgac	agaggtgact	gaagtatttg	caaaggaagg	tattaatctt	120
tctgtctctt	gcattgctga	aaatgccgac	tttggtattc	tccgggggat	tgtttccgat	180
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attatccgtc	ctaattgat	ggaaaactgt	atccgtgtgt	tgacggaaaa	gaaagttgac	420
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<210> 4080

<211> 1092

<212> DNA

<213> B.fragilis

<400> 4080

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aaacaagaag	gagcagagga	gattgtaaat	gatatagaga	accgcatttc	cgagcttttt	180
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<210> 4081

<211> 780

<212> DNA

<213> B.fragilis

<400> 4081

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catgctctggg	ccgaatgcta	cctcaaacaa	tacggatgga	tggcagtaga	ccccaatcc	660
ggaaaaagct	ggttaccaac	aactataatc	cgactttttg	ccggaacaga	ttatacagac	720
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<210> 4082

<211> 714

<212> DNA

<213> B.fragilis

<400> 4082

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<210> 4083

<211> 603

<212> DNA

<213> B.fragilis

<400> 4083

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gtgacagata	aaaatgagaa	gtgtttcctc	agtcgtaaaa	aaacagtgtg	tagtacgcaa	360
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<210> 4084

<211> 1641

<212> DNA

<213> B.fragilis

<400> 4084

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<210> 4085

<211> 318

<212> DNA

<213> B.fragilis

<400> 4085

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<210> 4086

<211> 735

<212> DNA

<213> B.fragilis

<400> 4086

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<210> 4087

<211> 579

<212> DNA

<213> B.fragilis

<400> 4087

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<210> 4088

<211> 2832

<212> DNA

<213> B.fragilis

<400> 4088

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<210> 4089

<211> 609

<212> DNA

<213> B.fragilis

<400> 4089

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<210> 4090

<211> 348

<212> DNA

<213> B.fragilis

<400> 4090

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<210> 4091

<211> 2118

<212> DNA

<213> B.fragilis

<400> 4091

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<210> 4092

<211> 351

<212> DNA

<213> B.fragilis

<400> 4092

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<210> 4093

<211> 1005

<212> DNA

<213> B.fragilis

<400> 4093

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<210> 4094

<211> 2049

<212> DNA

<213> B.fragilis

<400> 4094

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<210> 4099

<211> 1629

<212> DNA

<213> B.fragilis

<400> 4099

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<211> 882

<212> DNA

<213> B.fragilis

<400> 4100

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<210> 4101

<211> 591

<212> DNA

<213> B.fragilis

<400> 4101

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aattttctatc	atccggaagc	tgaagggggc	attgcctgga	atgatccgga	tttgaatata	480
gactggaaga	taccacaaga	ccgggttata	ttgagtggta	aagactacac	acatcctctg	540
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<210> 4102

<211> 246

<212> DNA

<213> B.fragilis

<400> 4102

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gcagatatgg	agaatcctaa	acggagagcg	aaatataatc	tcaatcattt	aatgagttg	180
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<210> 4103

<211> 543
 <212> DNA
 <213> B.fragilis

<400> 4103
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 gatcgccatt tacctgtaac ctgtgagttc atgacacacg aagaagccaa aagcattgtg 360
 gacctgagta agcttcggga aaatgcaagc gaaatattac gtattgtcag aataggagat 420
 tacgatgctt gcgcttgcac cgggcaacac gtagaaaaca catcagaaat aggtcttttt 480
 aaaattatca gttacgatta tgccgacgga aaattacgcc tcagattcaa actgataaaa 540
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<210> 4104
 <211> 897
 <212> DNA
 <213> B.fragilis

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<210> 4105
 <211> 1095
 <212> DNA
 <213> B.fragilis

<400> 4105
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 gagctgcaaa acagtggata cgaagtaatc atcattgata atttatctaa ttcaaagct 180
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<210> 4106

<211> 834

<212> DNA

<213> B.fragilis

<400> 4106

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gcccttgaaa	tcacaatatt	aaatgactcg	aaacaaaaat	ttgtcctgca	ccaatccggc	180
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<210> 4107

<211> 1797

<212> DNA

<213> B.fragilis

<400> 4107

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<210> 4108

<211> 1359

<212> DNA

<213> B.fragilis

<400> 4108

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<210> 4109

<211> 1272

<212> DNA

<213> B.fragilis

<400> 4109

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ttaatgaaat ag 1272

<210> 4110

<211> 840

<212> DNA

<213> B.fragilis

<400> 4110

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<210> 4111

<211> 1647

<212> DNA

<213> B.fragilis

<400> 4111

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aaaaaacatg	attcacccga	tattcaaaaa	cgagttggag	aagcttttaa	taaagctttt	180
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tattatttag	aagagtttaa	ttcaagagca	tggaaatatg	gattaagaac	gatgccatcc	300
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gattgcccac	ataaaatcga	agaatcatta	aaattatttg	atgaagatag	aattttacaat	480
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<210> 4112
 <211> 828
 <212> DNA
 <213> B.fragilis

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gaaacggtag acgaatatta tgctttcaaa aatgaatttc cggaaagtaa atatctgaag 780
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<210> 4113
 <211> 216
 <212> DNA
 <213> B.fragilis

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ttagtcacag attttacagt ttatacaagt cgcttgccgc caacaagtca actttctttt 180
ccgtcaacac acggatacag ttttccatat cattag 216
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<210> 4114
 <211> 534
 <212> DNA
 <213> B.fragilis

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gacggttctc ctatctatac cgacagtttc cgtcaattaa acactgaagt gcttcaaaaa 180
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catgcaatta tagattactg ggataataaa actttatcga tagatgaaca ggagactgta 480
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<210> 4115
 <211> 486
 <212> DNA
 <213> B.fragilis

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agtgtacttt	tccagatatc	atgggcatta	tgcttgcgtg	taatttcgat	tattctgaat	420
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<210> 4116

<211> 321

<212> DNA

<213> B.fragilis

<400> 4116

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<210> 4117

<211> 183

<212> DNA

<213> B.fragilis

<400> 4117

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<212> DNA

<213> B.fragilis

<400> 4118

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<210> 4119

<211> 2433

<212> DNA

<213> B.fragilis

<400> 4119

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<210> 4120
 <211> 1617
 <212> DNA
 <213> B.fragilis

<400> 4120						
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ggaaataata	cagggaaaag	actataatttt	ggtaaacggt	ataataccgc	agatgtagcg	1560
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<210> 4121
 <211> 762
 <212> DNA
 <213> B.fragilis

<400> 4121
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 gaaatgaaga aagaagatac cggcttgccg gcagagactt taaagcatgc cgtcgacctc 180
 ttccagcgta cagtatcgga attggtactg aacggatact ctgtcaatac ggggttattc 240
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 gaaacgaagc taccgatgga tatgatagca gtaaacaacc ctccggaagt actggtactc 600
 ctaccggcag acctgacaga cggaatatac aaactgcgac tgactacgca atataccagt 660
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 accgagggcg acggagatat tgtggacgac ccgacagcat aa 762

<210> 4122
 <211> 261
 <212> DNA
 <213> B.fragilis

<400> 4122
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 cgaacgtctt ttgaaacacc acctgtgtat tcaagacagt tatatctgat tggaatacac 180
 aaacttacgc ataataaaag ttgtatcaaa cagtcctttac cgacttatac ctttatgtat 240
 aagtcgggca agagattttg a 261

<210> 4123
 <211> 942
 <212> DNA
 <213> B.fragilis

<400> 4123
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 aaagaacgca tgctatatga catagcctta ttcacagacg aaaaacagat gaaccggaaa 180
 gatagaaaag cccggatcat ccctatgctg aggtggagtg cacgtattgc cgcgtagtc 240
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 caacaaacca taacagtacc tgccggacaa cgcgcacaaa tcacactggc ggatggaacc 360
 aaagtatggt tgaactocaa atcgacctta acctatgcat ccaacttcgg tcgtaaagaa 420
 agaaatgtag agctggatgg agaagcctat tttgaagtag ccaagaataa aaaaatacca 480
 ttcttcgtca atacggagat taatcgggtg aaagtggtag gaaccattt caatgtctgc 540
 gctacaaaag gcagcaacga atttgaaacg actttaattg agggaattgt cgacatctat 600
 ccgataggga gtgatcaggt aattaccggg ttgacaaaag acgaattttt cggatcgtac 660
 aatggaaaat ataaaaagac cactttgcct tcgtagcaat atctgagatg gaaagaggga 720
 ttatactgtt ttgatgtgc accctttaac agcctgctca acaaactgga aaaaattat 780
 aatgtgaaca tcagcgtgag aaacctgaac atactcaact accgttgtag cggttaagttt 840
 aaagaacagg atggcataga acatatcctg aaagttattc agaaagatca taagttcacc 900
 tatagtatca acgaagagaa agacagcatc atcattgaat ag 942

<210> 4124
 <211> 1125
 <212> DNA

<213> B.fragilis

<400> 4124

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aatgaaactc	ctttgttggg	acgcaacatt	cgccatacgg	tggaagagtt	gtctgccttc	180
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accggaggca	ttgcctattc	cgattatgta	atttcccgtt	taagggaacg	tatctctttc	1020
cttgctcccg	ttttcgtgta	tccgggagaa	gatgagatgg	aggctttggc	attgaatgct	1080
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<210> 4125

<211> 570

<212> DNA

<213> B.fragilis

<400> 4125

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gccgaagata	ttctgatgga	agcaatggcc	agcctgtggg	agaatcgcaa	aaaatgggaa	180
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<210> 4126

<211> 1629

<212> DNA

<213> B.fragilis

<400> 4126

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<210> 4127

<211> 750

<212> DNA

<213> B.fragilis

<400> 4127

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gtggctcttg	ctttaagttc	ttgtaattct	gaccctaaat	ttaatgtaaa	aggagatggt	180
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<210> 4128

<211> 324

<212> DNA

<213> B.fragilis

<400> 4128

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tggttagtgt	ttgggttgaa	tgaagctgtg	ttgctgggtat	tagcagccac	tgccgaactg	180
ccaattaccc	acgaggttga	attacctccc	tgttttacgt	ataccctctg	acaccgctg	240
atgggtattac	ttgtgaagcc	ggttacacta	atgcttattg	tcagtttaca	cagttttctgt	300
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<210> 4129

<211> 954

<212> DNA

<213> B.fragilis

<400> 4129

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ggcttgctgc	ctaaggggaa	gattctgact	catttgcccg	taatgcagat	tccgacgtat	420
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ccggtgggtg	taccgtcacg	cagtgattcc	ggactttcca	agtattatag	tattgcatg	900
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<210> 4130

<211> 1647

<212> DNA

<213> B. fragilis

<220>

<221> unsure

<222> (354)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4130

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aagtatccat	tttttccgga	aaaagggtat	gattccggta	ctgtaatccc	tattaaaatc	180
agtatggctg	aaaaatggaga	gtacgattcc	tatactccgg	aaaacgacat	ggctcctcgt	240
tacaatgctc	ctctgattgc	cgaatgggca	ggagtacaaa	ctctaagccg	taccggtaca	300
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ccttccaccc	taactaccg	tgcaaacact	ctgtctacag	gtgtttactt	tcgtctgatc	420
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agcaacaatt	atgtatgggc	aaccaacaaa	gaatatggct	actattacca	atggaaaaaa	1260
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tctcccggtg	aaggtaaaac	tgatgtcaat	agcacacaaa	agaaaatggc	atacacaact	1620
cgttgtgtca	aaggacctaa	actataa				1647

<210> 4131

<211> 267

<212> DNA

<213> B. fragilis

<400> 4131

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ccgcagaaaa	ctgctgatca	ttatcgcttt	acatttacgt	tgcggaatga	acctttggat	180
ctgatattaa	atataatgtc	gcatagtgcg	ccattaaatt	ataaattaat	aagtaatgac	240
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<210> 4132

<211> 1164

<212> DNA

<213> B.fragilis

<400> 4132

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caagtactaa	agatttcaat	gacaaagacc	aatgtatcta	ttgaaaatgt	acttcgtgaa	180
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aaagtatcca	tcaacgtatc	cgacgctccg	atcgaaaaccg	tattgaacga	agttttcaaa	300
aactcgggat	atacctacaa	gattgtagac	aatcagatcg	tagtgtctac	agcagctgca	360
gcagcgaaag	aggtacaggc	taccagcaa	cagaaacaaa	gaaaaatttc	gggagttgtg	420
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aacggtacta	tcactaatat	tgatggtgag	tttactctta	acactgccgg	taaggaactt	540
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attatattcag	gtccgggatc	tactccatca	attaatatgc	gtggtcgcgg	taacttggga	840
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<210> 4133

<211> 216

<212> DNA

<213> B.fragilis

<400> 4133

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ttattatttc	tgtttctgga	ttctacttac	attttgatta	tattatactt	tttatcattt	180
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<210> 4134

<211> 189

<212> DNA

<213> B.fragilis

<400> 4134

catcgtgcga	aaatgaaatt	taaaagtcgg	cctcttaaaa	gctattttact	acctcttatt	60
gattacaatt	caactatcat	aaatataata	aactcatatt	ataagcatca	tatagcatcc	120
cgtttttaga	tttatgtagc	aaacaaatcg	tatacaacac	ggtttgtctg	tcataagtta	180
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<210> 4135

<211> 240

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (119)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4135

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gttttggtac	acgggtggctt	ccgtgatcga	atcgtggaga	tgggctttat	caaagggtana	120
cccgtaggag	tattgcttaa	tgctccattg	acagaccgga	tctcatacgc	aataatgggt	180
tatgtaatct	ctctgcgacg	acaggagggt	gatatgattg	agattatcag	cgagcagtag	240

<210> 4136

<211> 2373

<212> DNA

<213> B.fragilis

<400> 4136

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gcccttttcc	tccttcttgt	cctgtatata	ttttgccttc	ccagccaatt	attcacctcc	180
ccttactcta	ccgtcgtaac	agaccggaac	ggtgaacttc	tcgggtgccg	tatcgccacg	240
gatggacaat	ggcgttttcc	cccgcgcgag	aatattcccg	agaaagttgc	cacttgcctg	300
attgaattcg	aggatcgcca	gttctaccat	cattggggag	tcaatccttt	ggcaataggc	360
agagccgtag	ttcaaaacct	caagcacaaa	cgtatcgta	gcggaggaag	tacccttacc	420
atgcagacca	ttcggttggc	tcggaacaag	ccgcgtacat	tcaaggaaaa	gctgattgaa	480
atggtgtggg	ccacccgttt	ggaatttcgt	aaatctaaga	aagagatact	gtcactttac	540
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ttcggacact	cggctgaaga	actatcatgg	gcagaatcgg	ccatgttggc	tgtactcccc	660
aactcaccgc	ccatgatcca	tctttcgaaa	agtcggcaag	cactcctcga	taaacggaac	720
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cagactcaaa	ttgaaagttt	ggtagaacga	tggaaacagt	aattcaaacg	gagtgcacac	960
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cgcccatcgt	ttcaatccgg	agccgtctgg	cagacttttg	atgcaataaa	agaagtgaac	1560
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gaagaccgat	tccaaccgat	gcaattttat	tatccgcca	tgggagcccg	tatccatctg	2160
cccaaacaga	tggatggcag	caaagggcag	ttgactgtcg	aactggttca	cagtcacccg	2220
aataacaacca	tctactggca	tctggacgag	acatactga	cgaaacgca	ggacttccac	2280
aaactttctc	tccgtccgtc	ccccggcaaa	cactccctga	cggcagtgga	tgacgaggga	2340
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<210> 4137
 <211> 1329
 <212> DNA
 <213> B.fragilis

<400> 4137

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gcattgctac	gtctcctgct	atcaatgggg	tatacctgcg	aagctgctca	180
catttgcggg	ataaagaatc	ggacagagac	gaagcttttg	tgcgccgatt	240
tcaggggttc	ttttacacat	agaacatttc	gatacaaccc	aatacgccgc	300
atcttctattg	agatggctgc	ccgggaatta	cgttatgaat	ggttcgaaac	360
caacgtgaag	ccagtgttat	cgcaacagcg	catcataaag	atgacagtgt	420
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ggtaacattg	ttcgcccttt	actttgcctg	agtcgcgaag	aaataatagc	540
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atagataata	taaggcaaac	gctcgacgga	caaccaggaa	aagtcttcct	900
tggagagtca	taaaagaccg	tgacctgtta	ttaatcgaag	aagatacaac	960
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cgcaagtggg	aaccaggaga	tgtttttata	cctttcggaa	tgaccggtaa	1140
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tgctttggag	aacaaatagc	ctggctgata	ggagaacgta	cggataaacc	1260
aacgagaaca	caaagcgggt	aataatagtc	cgaattgttt	ccgaacattc	1320
gaggaataa					1329

<210> 4138
 <211> 549
 <212> DNA
 <213> B.fragilis

<400> 4138

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ttaagcaagc	aaaaagaggt	aagcttgttg	ctggaagccg	acaataagat	180
cagttgttgc	gcattcatcc	gcaagcgggt	gttatttttag	actatacact	240
tccggtgcag	atgaattgat	catccttcag	gaacgattca	aagaatcaga	300
ttttcggatg	aattgagcat	cggattttctg	aggcagggtat	tggttcagcag	360
ggagtcgtgc	tgaaagacaa	ctccaataaa	gagataatga	cggccctgca	420
cgaaaagagc	gctctatctg	caatgatgta	agcaatcctg	cattatgccg	480
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acgcgatga					549

<210> 4139
 <211> 1053
 <212> DNA
 <213> B.fragilis

<400> 4139

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catgaaataa	atgacatttg	cgccattttat	tgtatctttg	caaaattaaa	180
atggacttga	agaaagaagt	gaagggaagag	tttatccggt	tccaacgaaa	240
gaaagtatcg	tatacgaacg	cgtgcctttt	attgaaaaag	acgaatcgac	300
ttacgtctga	tctcagcaga	agaaaaagcg	cattatgcca	cactgaagaa	360

accgacgttg	caccagacaa	gttgggtata	gccaaatatt	actggctggc	aagaatcctg	420
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gccaaatata	cagattatcc	ggacctccgg	caattggcca	atgaagaaga	agttcatgaa	540
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ggtctgaatg	atgctttggg	ggaatttacc	ggggcattgg	cgggattcac	tctggccttg	660
agtgactcca	ggctgatagc	cctgacggga	agcatcacgg	ggattgccgc	agctttatca	720
atggcttctt	ccgaatatct	ctcgacccaa	tccgaaggag	gagaaacgaa	acatcccata	780
aaggccgcca	tctatacggg	tattgcttat	atcatcacgg	tagtggcgct	ggttgctccc	840
ttcatattga	tcgaaaacgt	attgatagct	ttgggagtaa	tgctggccat	ggctttggta	900
atcattgcat	tatttaatta	ttactattcg	gtagcacggc	gagaaagttt	ccgcaaaaga	960
ttcaccgaga	tggcagta	tagtttcagc	gtagccggca	ttagctttct	gataggctat	1020
gcactgaaaa	catttacagg	aatagacgct	taa			1053

<210> 4140

<211> 282

<212> DNA

<213> B.fragilis

<400> 4140

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gagaactggg	aagctatcgg	gatgaatata	tgtggcatca	ccgaacagat	gccggtgagg	180
agcgaggcac	acaggatgac	gtggatgttg	ggggccatcg	cgatcaccag	caacgaaacg	240
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<210> 4141

<211> 897

<212> DNA

<213> B.fragilis

<400> 4141

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aattatagtg	gtgtgacggg	agatgctaaa	gaagggtatt	ttgatttcca	gggttatcac	180
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aatttttaaag	accatgggtga	acatccggct	gattataccc	atggcaaaga	accggtgggt	660
aaagtgttcc	gccatattca	tatcaatcat	ggaccggatt	tggagaaagc	cattgatgca	720
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gctatcaagt	tattggagaa	tgatccggaa	atagaacgtt	ttattcatac	tctgcccatt	840
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<210> 4142

<211> 627

<212> DNA

<213> B.fragilis

<400> 4142

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cgccgcgctg	accgtaaagc	acaaagagac	gcagaaagag	ccagactgaa	agctgaggaa	180
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gtactggaag	ccgatcaggt	aatcttcaaa	cgcgccagaa	cagctttcgt	atcgtccaac	300
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tcggcacaag	tctttatcac	attgacaaac	ggaggcaaca	acgccactgt	gaccattaat	540
ccgaacttca	actccaatac	attaacgttg	agcggcaacc	ttgttccgct	gaaccagtcg	600
gatgtattta	aaggccggttc	atggtaa				627

<210> 4143

<211> 1449

<212> DNA

<213> B.fragilis

<400> 4143

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ggaggtagcc	aagtgtccct	gctgactaca	acagccgttt	gcatactgat	cggtatggga	180
ttctacaaaa	taggctggaa	agactttgaa	ctggctatca	caaacaacat	tacaggagta	240
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ggtgtggtcc	ccacattgat	ttattacgga	gtgcaaatca	tacatcccag	ttttttcctg	360
acctctacct	gcattatctg	tgccttggtg	tcggttatga	ccggaagctc	ctggactacg	420
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<212> DNA

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<210> 4153

<211> 1587

<212> DNA

<213> B.fragilis

<400> 4153

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<210> 4154

<211> 999

<212> DNA

<213> B.fragilis

<400> 4154

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<210> 4155

<211> 609

<212> DNA

<213> B.fragilis

<400> 4155

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ttttatatatt	gcccctatgc	tatgtacgg	aatttttaata	tcggttttatt	aaagcataac	360
gatccgttgc	agagctatcg	tcgtaaagg	tggggagtat	cgggaggtat	ctcgaccggg	420
tataaatttg	ctttcaactc	tcgttggggg	ctggatctga	atattggcct	gggatatgcg	480
cacctccaat	acaataaata	ttatttgggt	ggagaatatg	tgaatttccc	tttggaacgt	540
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<210> 4156

<211> 3246

<212> DNA

<213> B.fragilis

<400> 4156

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<210> 4157

<211> 339

<212> DNA

<213> B.fragilis

<400> 4157

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tctattgcaa	aaataattgt	tttattatgc	gtaattcaaa	aaatatattt	aaatttgccg	180
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attagcttct	tatttttttt	atctgtcccc	cttttcttct	tcgataaaaat	atatgtaata	300
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<210> 4158

<211> 576

<212> DNA

<213> B.fragilis

<400> 4158

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<210> 4159

<211> 1170

<212> DNA

<213> B.fragilis

<400> 4159

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<210> 4160

<211> 210

<212> DNA

<213> B.fragilis

<400> 4160

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<210> 4161

<211> 1416

<212> DNA

<213> B.fragilis

<400> 4161

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<210> 4162

<211> 747

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (593)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4162

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<210> 4163

<211> 606

<212> DNA

<213> B.fragilis

<400> 4163

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<210> 4164
 <211> 2985
 <212> DNA
 <213> B.fragilis

<400> 4164

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<210> 4165
 <211> 246

<212> DNA
<213> B.fragilis

<400> 4165
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actctcatat gtatcgacca caaggccgga catgggtcca acaaagccac aacaaagtta 180
gtaaaggagc aagcagacat ctatgcattt atcatgtata acctggggat gaaaatgaaa 240
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<210> 4166
<211> 825
<212> DNA
<213> B.fragilis

<400> 4166
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<212> DNA
<213> B.fragilis

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gcgataggct atcagtcagt agcttcttta ttatattcct atttctggt gtccgcttgtt 180
tcatctttat taccttctta ttacctatct atttataaat acacgcaact ccataacatc 240
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<210> 4168
<211> 192
<212> DNA
<213> B.fragilis

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ttctctattt ttctttttaa atttgtattg tttctccctg aaaaattgta tgtttgcaca 180
tcacaccgat ag 192

<210> 4169
<211> 1011
<212> DNA
<213> B.fragilis

<400> 4169

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<210> 4170

<211> 1548

<212> DNA

<213> B.fragilis

<400> 4170

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<210> 4171

<211> 1638

<212> DNA

<213> B.fragilis

<400> 4171

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<210> 4172

<211> 189

<212> DNA

<213> B.fragilis

<400> 4172

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<210> 4173

<211> 1359

<212> DNA

<213> B.fragilis

<400> 4173

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<210> 4174

<211> 606

<212> DNA

<213> B.fragilis

<400> 4174

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<210> 4175

<211> 1752

<212> DNA

<213> B.fragilis

<400> 4175

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<211> 3387

<212> DNA

<213> B.fragilis

<400> 4176

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<211> 1491

<212> DNA

<213> B.fragilis

<400> 4177

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<211> 1947

<212> DNA

<213> B.fragilis

<400> 4178

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<211> 3423

<212> DNA

<213> B.fragilis

<400> 4179

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<211> 1776

<212> DNA

<213> B.fragilis

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<210> 4181

<211> 510

<212> DNA

<213> B.fragilis

<400> 4181

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attaatactc	atataaaaga	ttcggatttg	cattgttttt	tatcagagga	tggtgttaat	180
gttgggttatt	ttaatattgat	tgagacaaat	atcattgtctg	atgatttaag	ttatagagca	240
tatggtgttg	gtaatgtttg	ttctatcgtc	agaaaaaagg	ggtatggcag	tatactcctg	300
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gaattgtcac	atttttataa	taaatctggt	tggaaattag	taccataatt	aaagttatta	420
tgtgagttct	cattaactaa	tatagagatg	atgacatata	attgtgaatt	taattataaa	480
caaattattt	ataaaggagg	gcctttttta				510

<210> 4182

<211> 264

<212> DNA

<213> B.fragilis

<400> 4182

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caggagagggg	gctatggccg	tagcatccta	aaggattttt	cgaacgacgc	ccaaatcaaa	180
tccttgcaaaa	gtgatggcta	taatgtctat	atgtatcttg	atgatgagtt	gatagagggtg	240
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<210> 4183

<211> 486

<212> DNA

<213> B.fragilis

<400> 4183

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gttttagaac	aatccgatgc	gttgatccct	cagcgcgggtg	ctacttccga	agaggaggca	180
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gcgaaagagg	cgcatactat	catagaaaagt	tggaaagata	aagaactttc	tgaagataaa	420
aaagaggcaa	tcaataattt	gagaaaatttg	gaagagaatc	catatcctta	tagtgaaatg	480
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<210> 4184

<211> 234

<212> DNA

<213> B.fragilis

<400> 4184

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caatatagcc	actatacaat	atcttgtgta	attctggcat	taaaatatca	gcaggaggaa	180
gataagggtt	cactaaaggt	atcattatta	tttatcttat	ttattttatac	ctaa	234

<210> 4185

<211> 285

<212> DNA

<213> B.fragilis

<400> 4185

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gaattaacgt	ttaagagtga	gaaagatatt	atgcgctgta	tagatactgt	aactattact	120
atctcgaaaa	tggagattga	tttacctaaa	atagagattg	ttaagcaatg	tggtatgatt	180
gctgctaata	ctgtcttttt	aataaatagt	ttgacttcta	atattccata	tatgtttttg	240
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<210> 4186

<211> 231

<212> DNA

<213> B.fragilis

<400> 4186

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atctcgcgca	tgtgggttgc	ctttgctctc	gatgaaaaca	ttcgcggaat	tatctttgtc	180
cgctcgttgg	atgggatgaa	gtgggtgaat	aaaagctttg	tgagggtcata	a	231

<210> 4187

<211> 258

<212> DNA

<213> B.fragilis

<400> 4187

gctgaaaaag	cggggaccaa	cctgcaaccc	caaggcatat	acaaagataa	tgagccccgaa	60
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gccggcaaaa	aagacaaagg	taacgccaaag	cgaatgccca	caaacatgaa	ttttgccccaa	180
tccgagccca	atggcggaag	tcagggaag	aacgacaact	gcttgcaaaag	cagaatgttc	240
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<210> 4188

<211> 1209

<212> DNA

<213> B.fragilis

<400> 4188

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gccaaacacg	gtattcagat	taccggagtt	gacattaatc	ctaaagtagt	tgaaatgact	120
aatttgggta	aattgcata	tattgaacca	ggtatgcagg	cactgcttca	agaagtagtt	180
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gttggcacta	ccgataaaat	ggcagatttg	atttttgatt	tacgtccgga	attgaaagat	420
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cctcgtgtga	atatacctca	accaggttgt	ggtgtagggg	ggcattgcat	tgcggttgat	780

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actgactata	aagaagctta	tacaaaggct	gatattgtag	tatttctcgt	agctcatact	1140
tcgttcaagt	ctcttcctta	tgatgagaca	aaagtcattc	ttgacttttg	tggtatctcc	1200
aaaagataa						1209

<210> 4189

<211> 1296

<212> DNA

<213> B.fragilis

<400> 4189

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agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcggt	180
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gacaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatacg	atggtgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
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gtctatatcg	agaacagcga	tggtaacacg	aatgtgcgtt	ttcatcaggc	agacacccat	600
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cctgccaaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
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<210> 4190

<211> 246

<212> DNA

<213> B.fragilis

<400> 4190

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ggtaaccgcc	ttgtaaaggt	cctgaccgga	cagagagggg	taggtaaagg	atgcctgttg	180
cggcagatca	tctatcagtt	gatgcgatgg	ggtgtttcat	cacgggacca	ttctatatat	240
aagtaa						246

<210> 4191

<211> 837

<212> DNA

<213> B.fragilis

<400> 4191

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tatggcatga	aaggactcgc	gattgtactg	aaactcctat	gcaagatata	taaagaagga	180

tattatat	cgtggggtga	ggaacaatgc	cttatttttcg	ccaacaagac	gggaaaagag	240
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cccgatacgc	cattttaatac	aatgacacac	aactacgtgg	gattaatggg	aaacctggaa	660
cgattcggaa	taacagacga	aaaagagatc	gaagcaatcc	tgcgactgtc	ggattacggg	720
agaaaaggaa	ccccgtatg	gaaactgatt	tgcagcacga	actggagtaa	catcggagca	780
aaaggaaaat	acatgatcgc	agcgttgaac	cgggcaaaga	aaagaagcgg	aacctaa	837

<210> 4192

<211> 525

<212> DNA

<213> B.fragilis

<400> 4192

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attcgtgact	ctcttgaaaa	attgaagact	gaacttgatc	tcaattacta	tcttcccact	120
cagtttgta	tccggcagtt	gaaatatcgt	cgaacacggg	tggaaagtccc	tgttattaag	180
aatcttatct	tcatccaagc	taccaagcaa	gatgcttggtg	atatttctaa	taaatacaat	240
atccagcttt	tttttccgaa	agacttgctt	accagggcta	tgctgatagt	tcttgataaa	300
cagatgcagg	acttcatatt	tgtcatggat	ttagatccga	atggcgctcag	tttcgataat	360
gaccatttat	ctgtcggtag	cagggttcag	gtagttaaag	gtgatttctg	tgggtgtcgag	420
ggcgaacttg	ccagcggaggc	caacaaaact	tatgttggtta	ttcgtattgc	cgggtgtattg	480
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<210> 4193

<211> 1698

<212> DNA

<213> B.fragilis

<400> 4193

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gccaccctac	agtataaaga	cgtagcccgc	aaaatagaaa	agctccacat	catctttgaa	180
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 <212> DNA
 <213> B.fragilis

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	atatatagag
	gaatcttaa
	60
	120
	180
	219

<210> 4195
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 <212> DNA
 <213> B.fragilis

<400> 4195	
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	300
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<210> 4196
 <211> 252
 <212> DNA
 <213> B.fragilis

<400> 4196	
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	180
	240
	252

<210> 4197
 <211> 345
 <212> DNA
 <213> B.fragilis

<400> 4197	
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aagcgtcaga	atttgcccat
cctgccttga	agggtatcgc
tgccgttacc	ggacttgctt
	60
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	300
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<210> 4198
 <211> 390
 <212> DNA
 <213> B.fragilis

<400> 4198

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gcagtatcga	aaaacgaaat	gatgaaagga	aatggaaaa	gacaaatcat	gctcgaaaag	120
gactacacag	aacagtgtc	cgaatggatg	gcagaacgac	tggaaagcct	catagaatat	180
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aaaaaacacag	tgggtctaccg	ggatgtggaa	caacaaaggt	ggatgacctt	caaaatagag	360
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<210> 4199

<211> 1095

<212> DNA

<213> B.fragilis

<400> 4199

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gatgaggaaa	tgccggagta	cgtgtttttg	gctgccgctt	ttgtcggagg	gatcatggcc	240
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acttttgaca	gcagtaaacc	ggacgggaacc	atgcgaaaac	ttaccgatcc	gtcgaaattg	1020
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<210> 4200

<211> 1161

<212> DNA

<213> B.fragilis

<400> 4200

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acgcaaccac	ttgacagtac	acagactaca	tatgtcaacc	tggggctttt	ctcggcaatg	180
cataagttgc	acggtgtagg	cttcaatgcc	ttcggaaagta	tgggtacagaa	caatatgaac	240
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ggaggtatca	gtaacgtaaa	cggcaacaat	ctggcaggat	tgtctgtttc	gggacttgtc	360
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<210> 4201

<211> 252

<212> DNA

<213> B.fragilis

<400> 4201

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tacagtagca	gtgattttga	aaagtataat	ttctctacta	gacagagagt	gaaccccaaa	120
ggaatttcaa	tttaattcttt	ttgtctgac	caaggtgttc	tctatcgtaa	ttttaataact	180
tggtttgtga	agactcgcaa	gagaatcgtt	ccggttcaga	ttgaaggttt	cctttttctg	240
atttccttgt	ga					252

<210> 4202

<211> 210

<212> DNA

<213> B.fragilis

<400> 4202

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cgggataatc	tgtagctac	tgagactaag	gaaaaatgta	atgatattta	tattaatgga	180
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<210> 4203

<211> 192

<212> DNA

<213> B.fragilis

<400> 4203

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aataatgtta	gttttgagat	gctctataaa	tctcagaaaa	tggaatgac	atttagaatg	180
caaaagatgt	aa					192

<210> 4204

<211> 1173

<212> DNA

<213> B.fragilis

<400> 4204

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tgtgttactg	gtcagcatcg	tgaaatgctt	gatcaggat	tgaacatctt	cgaaatcact	180
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ccagtgccttg	taatgagaga	caccactgag	cgtcccgaag	cattggaggc	cggaactgta	1020
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aaagtgtatt	atgaagaaat	gagtaaactc	gtgaatcctt	atggagatgg	aaaagctagt	1140
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<210> 4205

<211> 2022

<212> DNA

<213> B.fragilis

<400> 4205

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gaaaccgata	ttgacgattg	gtacctgac	actctcaatc	agctggtaaa	ggtctgccag	420
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<210> 4206

<211> 402

<212> DNA

<213> B.fragilis

<400> 4206

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tttaattgta	tactagctat	agtggctata	ttttcagtag	tagcgacgaa	tttgggagct	180
aaccatgtaa	taacaagaga	ggttacttta	caccccgata	acacgaaggg	aatttggtat	240
aatgtaatac	ctttcaggtt	aattgcatta	gcgattgctt	ttcttgaggt	ctttgtctat	300
atagttagtg	ggaaagatga	ccaatttagc	ccgagcctgg	ttcttttcat	ttgcatattc	360
gccccatccg	tttggcgctc	taaaagaccc	cactcgcat	aa		402

<210> 4207
 <211> 369
 <212> DNA
 <213> B.fragilis

<400> 4207
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 aatggaaaag taatcttttg gggtaaagcc gacttgcaat tcagcctcaa tcaaaagggtt 120
 agagaaccac tacgcatcac aaaaggcaaa ggaaagctaa tggaggcact taccgaaagc 180
 tttatcaaag gcggaatcaa cagcatggaa aacagaccca ttgaagaact acaggaaaca 240
 ataaaagaat atctcacctt tgaatatcag cgcaaaggca ttgctacaga gcccaataaa 300
 cgttcttttc tatcagagct gaaaaaatat gccagagcat tccggaaaaa acgagatgaa 360
 agcgaataa 369

<210> 4208
 <211> 270
 <212> DNA
 <213> B.fragilis

<400> 4208
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 gcgtcaacct ctacggatac aggttggttg gacgcttctt cctgtatat tccggttctg 180
 gctgtaaagg tggtacttat aagaaaagata tctgtgatga tcttattgaa cataaatgtg 240
 actgttcgaa acttccggcc gggacggtaa 270

<210> 4209
 <211> 186
 <212> DNA
 <213> B.fragilis

<400> 4209
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 ggcttcaact ctaaaaccgt taatgcaact tgtatcgcag aagcatatga gtttggtgtc 120
 agtaaatttt caatccctaa gaaagtcgat aatttttctt ctaaaagaag tccccacttt 180
 ccataa 186

<210> 4210
 <211> 891
 <212> DNA
 <213> B.fragilis

<400> 4210
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 gtacttatgt tagctggtat acgagaaata ctaattattt ctactcctca tgacttaccg 180
 ggttttcaac gtttactggg tgatggttct gattttggag tacattttga gtatgcagag 240
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 gtaagtgate ctgaacgcta tggcgttgca gagtttgatc aggagggaaa tgtgctcagt 480
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 aggcaagggt ggatttcttt agcaaaaatg aagtcattgg cgaatttgat gttgagaaat 840
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<210> 4211
 <211> 1671
 <212> DNA
 <213> B.fragilis

<400> 4211
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 atttgcgttg gcgttacott tgtctttttt gccggcattc tggccgggca cttcggattg 180
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 aatgatacca tccccggaga taatccgtcg gtagcttatg ctacggctca tccggtgagt 1620
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<210> 4212
 <211> 1032
 <212> DNA
 <213> B.fragilis

<400> 4212
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 caaaaagatg gtcctatggt agtagaacat gagtataatt cagagaatac gcacgcgtta 960
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1032

<210> 4213

<211> 564

<212> DNA

<213> B.fragilis

<400> 4213

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aaaactactt	ttattcagga	taatgaatct	aaatcaactt	atgggtgttat	tctgtggtcct	180
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gaacttactg	gagacaatca	tcgtcagttc	tttattccac	gtggccttgc	acatgggttt	360
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<210> 4214

<211> 1125

<212> DNA

<213> B.fragilis

<400> 4214

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ttgggatgga	atccatgcaa	aacaccattc	ccggaactgg	taaaaatcat	ggtacgccac	1080
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<210> 4215

<211> 1095

<212> DNA

<213> B.fragilis

<400> 4215

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<211> 252

<212> DNA

<213> B.fragilis

<400> 4216

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<210> 4217

<211> 1077

<212> DNA

<213> B.fragilis

<400> 4217

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<211> 1083

<212> DNA

<213> B.fragilis

<400> 4218

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<213> B.fragilis
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<212> DNA
<213> B.fragilis
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 <212> DNA
 <213> B.fragilis

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 <211> 792
 <212> DNA
 <213> B.fragilis

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 ggaatgtgga ccttttatgt ttgcagcttc gtactggacc aggtagtga cagtgcgcgc 660
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 gccaaaagat ga 792

<210> 4223
 <211> 825
 <212> DNA
 <213> B.fragilis

<400> 4223
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<210> 4224

<211> 2589

<212> DNA

<213> B.fragilis

<400> 4224

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<211> 291

<212> DNA

<213> B.fragilis

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<210> 4226

<211> 510

<212> DNA

<213> B.fragilis

<400> 4226

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<211> 1578

<212> DNA

<213> B.fragilis

<400> 4227

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 <211> 819
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

<400> 4229
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gtagaagtat	gtgtggacat	gaagcaacag	ggcgtagccg	gttacaacag	ttgggggtgca	3060
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<210> 4230

<211> 303

<212> DNA

<213> B.fragilis

<400> 4230

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tattttgtacc	ctaaattatt	aaacagaaat	agaaaaaact	atgaagacaa	tctactctt	240
tgtcttgagt	ctgttgctct	ctttatccgt	gtcggatgtt	tgtgcacaag	agcgtattta	300
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<210> 4231

<211> 1194

<212> DNA

<213> B.fragilis

<400> 4231

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gaaaataaaa	aaacgataag	acaatacgaa	attatgatta	atactttaac	atcgttgaga	180
ttcatatttg	caataatggg	ttttggagca	cattgctatg	ttatagacaa	tgttttcaat	240
acccattttt	tcaaagaggg	atttgtaggc	gtcagcttct	tttttgtgct	aagcggcttt	300
agtatagcat	ataattatca	agagaaactg	aaagacgaca	aaatagacaa	acgcactttc	360
tgggtagcac	gcattgcgcg	tatttatcct	ttacattggc	tgacattgtt	tattgctgct	420
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tcgtcactt	tgacaaatgc	ttatattccc	agagccgact	actttttctc	tttcaacagc	540
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tggctccctg	ttgcgggtgat	tctgattagt	ttttcacttc	agaaagggtat	cttttcccgc	960
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catctattttg	tcttattgac	atattcagaa	tggcaaaaag	aaaataatct	tcatacggaa	1080
tggtagat	ccgtcccgat	tttattcagt	atcatcattc	tattaagcct	gctttcttac	1140
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<210> 4232

<211> 258

<212> DNA

<213> B.fragilis

<400> 4232

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gttattttg	cacaagaacc	tgacaaccgg	caaaagacgt	taacaatgtt	aattgaaaaa	120
aggtataagg	atgaagatac	cgggttcagac	ggcgtaaact	cacttccgaa	acttaagtta	180
tcttattcag	ccggtgtctg	ttttttctta	ttaaagcaag	caaaaaggac	aattatcaac	240
ttggaaataa	agaaataa					258

<210> 4233

<211> 789

<212> DNA

<213> B.fragilis

<400> 4233

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atcgggtgaaa	acgtagagat	agctcctttt	gtgtacattg	atagaaatgt	agtcacgcga	120
gataacaata	aaattatggc	taatgccaac	atcctgtacg	gttcacgtat	cggtaacgga	180
aatacaatct	ttccgggagc	cggtatcgga	gcaatccac	aagatttgaa	attcaaagggt	240
gaagaaaagta	cagccgaaat	aggtgacaat	aacctgattc	gtgaaaacgt	gaccatcaac	300
cgaggtagac	cagctaaagg	cagaaccatt	gtaggtaaca	acaacctatt	gatggaaggc	360
gtccatgtgg	cccacgatgc	attgatcggc	aacgggttga	tcgttggtta	ctccaccaaa	420
atggccggag	aaatcatcat	cgatgacaat	gccatcatca	gtgccaatgt	gttaatgcac	480
caattttgcc	gggtaggcgg	atacgtcatg	attcagggag	gatgccgttt	cagtaaagac	540
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atcattttatc	aaagcggact	caacacttcg	gatgctctca	caaagggttg	agcagaagtg	720
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<210> 4234

<211> 1170

<212> DNA

<213> B.fragilis

<400> 4234

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gatatttttg	gtggggaccc	cgaatattgt	aatatcatgc	atgctgatgg	tgagggaacc	180
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aatattcttg	tatcctctac	tatcggacgt	aacaagttgc	ttatccccgg	agaagtaatt	360
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aatggcggtg	tgggcagcaa	tggactgact	tccgcccgtc	atgatgtatt	cgccaagtat	660
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caggaacaaa	gcggtaccga	ttgggctgaa	atgtataagg	tattcaacat	gggacaccgc	1020
ctcgaagtat	atctctctcc	ggaacatgca	gccgaagtga	tcgccatcag	tgagtccttc	1080
ggtatcccgg	cacaaattgt	gggacgtatt	gaagagagt	ataaaaaaga	actgattatc	1140
aaaagtgaat	tcggtgaatt	cagatattaa				1170

<210> 4235

<211> 261

<212> DNA

<213> B.fragilis

<400> 4235

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aacagcacct	gtggacttat	tgtgaattcc	tctcgcgga	ttatttatgt	agataaaaca	180
gagaattttg	ccgctgccgc	ccgtgctgct	gccaaagaag	tgcaagagca	aatggcagaa	240
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<210> 4236

<211> 693

<212> DNA

<213> B.fragilis

<400> 4236

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gtaacaacta	tgatatacag	atttaccatt	atatctgatg	aggttgacga	tttcgtcaga	180
gagatacaga	ttgaccggga	agctactttc	ttcgatcttc	atgaagctat	cctgaaagca	240
gcaaaactata	caaacgacca	gatgacttct	ttctttatct	gtgatgatga	ctgggaaaaa	300
gaaaaagaaa	ttacactgga	agagatggac	aataatccgg	aaatggacag	ctggattatg	360
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gattacatga	ctgaacgttg	tttcttcac	gaattgtccg	aaatcatcac	cggaaaagaa	480
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gaagagatgg	cagccggagg	aggctcactc	gatctggatg	aaaacttcta	cggtgaccag	600
gacttcgata	tggaagactt	tgatgccgaa	ggatttgatg	taaatgacgg	tgacagccgga	660
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<210> 4237

<211> 1113

<212> DNA

<213> B.fragilis

<400> 4237

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accaaagaat	acaaggagct	ggacgacttg	atgaaagccc	gtaaagaata	catgcaacta	180
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<210> 4238

<211> 393

<212> DNA

<213> B.fragilis

<400> 4238

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gaaaccaagg	actttgaata	ttcagactgt	ttcacttctt	cctgttttagc	ogaacggaaa	180
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tgcaccgcca	cccgattttg	taaatcagac	atcatttgga	cgatgtgtcc	cgggagtttc	360
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<210> 4239

<211> 1107

<212> DNA

<213> B.fragilis

<400> 4239

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gttaacacta	ccgaagcaga	cgctcccgat	tatgtgttgc	aacgcatcaa	ccatgcaatt	180
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<210> 4240

<211> 219

<212> DNA

<213> B.fragilis

<400> 4240

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aagaagcgaa	aaaagccgga	taaaataaaa	agagttacaa	agggagcggt	attacataat	180
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<210> 4241

<211> 1647

<212> DNA

<213> B.fragilis

<400> 4241

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<210> 4242

<211> 3543

<212> DNA

<213> B.fragilis

<400> 4242

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<211> 1389

<212> DNA

<213> B.fragilis

<400> 4243

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<211> 1254

<212> DNA

<213> B.fragilis

<400> 4244

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<211> 747

<212> DNA

<213> B.fragilis

<400> 4245

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<211> 756
 <212> DNA
 <213> B.fragilis

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<210> 4247
 <211> 1188
 <212> DNA
 <213> B.fragilis

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<210> 4248
 <211> 231
 <212> DNA
 <213> B.fragilis

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<210> 4249
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<212> DNA

<213> B.fragilis

<400> 4249

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ggaggatcgc	tgattgagga	taatgaattc	gatacgtttg	atgcaccgat	tctttatgca	1680
aaatctgtag	atgggttgat	attccgtaac	aatgtgatca	aaaccaatac	agagtttaag	1740
cctttccact	ggaataaaga	tcgattcttg	ttggaacgag	tgacaaacgt	gaagatttca	1800
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<210> 4250

<211> 681

<212> DNA

<213> B.fragilis

<400> 4250

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aatataacctg	actcgctttg	tccgttgctg	tcatacgtga	accgggcaga	ttgtatcgat	180
tttattgaaa	gtaaaatgaa	agctcaggtg	accaaccgtt	tcgggggcaa	gtcggagatg	240
acggagttaa	gtcccgatta	tgtgtctctg	caaatgtctg	acgcaagcaa	ttggcagatg	300
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gactttttgc	cgtcggttcc	tcagatgaat	gatttcttca	cctcttccga	ttctaccgac	480
tatgacttta	tcgatgcccg	cctgcaagcg	gatatggctt	tgatgcaagc	agaactgtcc	540
aaagagaatg	ggacattgac	ttttactttg	acaactccgg	aatatatgga	aaaagaaacg	600
gcggaaaaaac	tgaaaccgtt	tctccgccgt	tcaatagttt	acacctggaa	ggatgggaag	660
tttatcccg	acactctttg	a				681

<210> 4251

<211> 2112

<212> DNA

<213> B.fragilis

<400> 4251

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cgaactgttt ggactctgaa gccatattta ttccgagtcg gaggattaca ctttaacccat 60
tatgtattta tgaagagatt attatccggt tttttatttc ttttttgctg cgttatagcg 120
gccgatgcac aagacgatgc cgcacagtat gattcgataa tgaatctgat gaaaaataaa 180
aagattcctt tgatggaacg ttatttatatg accggggata tcgaatatct ttcacgggag 240
catcagattg ccgtgctgaa gcaattgatt ccggaagcga aagaggtgga ggataaggcg 300
gtcattaccc gtctttattc cattgtagcc atgttcgaaa atcaacttgg acatatgact 360
gaggctaaaa actatctgga cagtgccttt atgaataagg gaaagtttga aaacaacaat 420
atttcgggta tgatgacta cattgccgga atctattatt cggataagaa cctgatggaa 480
caggcacatg agaattatta tcaggctgct gagtatttta atcgcaatga aatgaagccg 540
gccatcttaa cggagattta ttatgatctg tctatcattt actcgatgtg gcaagatgat 600
gagggattac atgaattgtc ggaagcgatg aaagacttac cggtagattt cctttttcag 660
cagatattga agtgaccat aaaggtgaaa tacttttatg ccttatatca gaatgaacac 720
cgggtggatt tgctggattc tgtgacgaag tataaccagg aggcctttta ggtctacaca 780
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aactttgaca atttatcgca gaaggtgtcg ctggagatct atcgaattgt acaggaagct 1860
gttggttaact cgttgaagca tgcacaagcc acgttggtga agattatcct ggtgcgggaa 1920
gataacaagg tgaaattgac agtttcggat aatggaagag gatttgagca acagaccggg 1980
aagacgggaa ttggtcttac tatcataaaa gagcgtgtgg aaaacctgag gggaaactctg 2040
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ctggaaaaat aa 2112

```

<210> 4252

<211> 240

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (12), (35), (87), (98), (136), (140)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4252

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cgattcctcc ttacctcggt catcacnccg tacactgnta cgagtctagc gcgacgggag 120
cactgtcctc acctentatn tcgtgtaatg tcgtctcgtc tattctctca ttgtaataag 180
catgtggccg gtactcgcga cgacacactc cagcttatct cactctctca tagtaagagc 240

```

<210> 4253

<211> 195

<212> DNA

<213> B.fragilis

<400> 4253

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ttttttgtca	actataaaaag	agggctttaca	cgctccgaaaa	ctgaattaga	ttccatgagt	120
aaaagaaaac	ttaccacca	atttgaagaa	gaacccccaa	aaaatcgatc	tttcatcttc	180
caccctctgt	tttaa					195

<210> 4254

<211> 957

<212> DNA

<213> B.fragilis

<400> 4254

aatatcctca	ggagatattc	gaataagcct	atagcttcta	atttaaagaa	ttctattatg	60
tggttacttc	ttgcttttct	ctcagcgaca	ttgctgggct	tttatgacgt	gtttaaaaag	120
aaagcgttga	aagacaatgc	ggttttaccg	gtgttggtct	tcaatacact	tttttccagt	180
cttatatttc	ttcctttttat	tttggttgctg	gcatttgccg	ccggagtgc	ggagggcact	240
atgctcgatg	taccgggtgg	gggatgggaa	gtacataaat	ttattattat	taaatcattt	300
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gtaggaccga	ttaatgccac	ccgtcccgtg	atggtgcttg	tgggagccat	gctggatttt	420
ggcgagcgct	tgaatctcta	tcagtggatc	ggcgtgatgt	tggccattat	ttcttttttt	480
atgctgagtc	gttcggggaa	gaaggaaggt	attgacttta	aacataacaa	gtggatactt	540
ttcattattc	tggcagccgt	agcgggtgctg	gtaagtggct	tgtatgataa	atacctgatg	600
aagcagctgc	ctcccatggt	cgtacagtcg	tggataatg	tgtaccaaat	gtttattatg	660
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gattgggcta	tcattttttat	ttccatcttt	ctctgtgctg	ccgattttgt	ttacttctat	780
gcattgagct	atgaagattc	catgatttgc	attgtctcga	tggttcgcag	gggaagtgtg	840
attgtatctt	tccttttccg	tgcctatggtg	ttccgtgaaa	agaattttaa	aagcaaagcg	900
attgacctta	ttctggtggt	aataggaatg	atattcctat	atttggaac	taaataa	957

<210> 4255

<211> 957

<212> DNA

<213> B.fragilis

<400> 4255

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gtgtaccacg	gaaaagtgcg	tgatgtgtac	aacatcaatg	gcgaacaact	cgtaatggta	120
gctaccgacc	gtatttcggc	ctttgatgta	gtgttgcccg	aaggatccc	ttataaagga	180
caaagtctga	atcagattgc	agcaaaattc	ttggatgcaa	ccacagacat	ctgtccgaac	240
tggaaaactc	ccactcccga	cccaatggtt	acagtgggag	tactctgcga	aggtttcccg	300
gtagaaatga	tcgtacgtgg	ctatctttgc	ggaagcgcat	ggcgtgctta	caaaaaacggc	360
gtacgcgaaa	tctgtggcgt	aaaacttcc	gaaggtatga	aagagaacca	aaagtccct	420
gaaccgatcg	tcactccgac	tacaaaagca	gaaatgggat	tgcacgatga	agatatctcc	480
aaagaagaaa	tcctggctca	gggactggct	actccggaag	aatatgccat	cctcgaaaaa	540
tatacattag	ctttgttcaa	acgtggtacc	gaaatagcag	cggaacgcgg	tttaattctg	600
gtagacacca	aatatgaatt	tggaaagcac	aacggtagca	tctatctgat	ggacgaaatc	660
catactccgg	actcaagccg	ttatttctac	gccgaagggt	atcaggaaacg	ttttgaaaaa	720
ggcgaagcac	agaaacaact	ttccaaagaa	tttgtagcgc	aatggttgat	ggaaaaacggt	780
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agcgagcggt	atatcgagct	gtttgaaaac	atcacggcgc	aaaaattcgt	gaaagaggat	900
accagcaaca	ttgccgaacg	tatcgaaaag	aacgtaatgg	cattccttgc	aaaatag	957

<210> 4256

<211> 1200

<212> DNA

<213> B.fragilis

<400> 4256

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ctggccggtg	cagtaccgt	agtcaacgga	aaagtcattt	ttgcagaagt	aattcaagct	180
tccgatatgt	cgaacaggca	gatctatgat	gctttgttaa	aatgggcaga	gaagcgtttt	240
acaccttcaa	aaggacagaa	ggggagagtc	gcctattttg	atgggaaaaa	agggcagatt	300
gcatgttttg	gtgaagagta	tttgcaactt	tcggcaacga	atagcttctt	cttggatcgt	360
gctactatta	aataccggct	ggtgattaac	tgcctggacg	gttcctgtaa	gatggagatg	420
tacaacattt	cttattttca	tggatgatgat	acagagatgg	aggcgggaaga	ttggatcacg	480
gatgagaccg	gattgaataa	agccaaaacg	aaagtgggtg	ccaaatatgg	aaaactccgt	540
atcaaaacaa	tcatctgtt	tgatgacttg	acggagcagg	ttacgaaaac	gctgggagga	600
gcaaaatcag	aggttcctct	attggcaaaa	gaacctaaag	ttactccgga	agtgttcgat	660
cgggaatttc	caaaggctgt	ggagcaggga	gctatggcag	ggtataaaca	tattcctgct	720
gataagattc	cgggtaatat	cattaaaatg	ctctctgaag	attggatggt	gattacagcc	780
ggtacggaag	ataaatacaa	catgatgaca	gccagctggg	gcggactggg	gtatctctat	840
aataagccgg	tttcattctg	ttttatttat	cctacacgct	atacttatca	attgatggaa	900
agaatgata	catatactat	cagcttttat	acagagactt	atcgggatgc	tttgaaatat	960
tgcggtagtc	atagtggcga	agatgttgat	aaagtgaaa	gcgccggatt	gactcctctt	1020
actactcctt	cgggcagtaa	agctttctct	gaagcatgga	tgatcataga	atgtaagaag	1080
atgttatccc	agccgatcac	tcccggagcc	tttgatactc	cggagttgaa	agaagcatgg	1140
aaggataaat	ctttgcatac	gatgtatatc	ggtgagataa	tgaatgtgtg	ggtcaaataa	1200

<210> 4257

<211> 240

<212> DNA

<213> B.fragilis

<400> 4257

aaaggctgtg	gctccggagg	taaacgtgac	attgaatccg	gcagactaaa	aaatatttat	60
tgtgggggtg	tactcccaca	gaccaatgtg	tcaaaactca	ccatggagga	caagccttct	120
atcctcgggt	ggaaggatgg	aaaaaaacgg	gaaaatatcg	atttgaaaga	actttatcaa	180
ttatataatg	aaatagattc	gtatattagc	caacgatata	acgaactgtt	tggactctga	240

<210> 4258

<211> 444

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (15), (137), (237), (243), (280), (303), (355), (366), (404), (408)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4258

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gcacagccgg	ctagacgagg	tgatcatgtg	gatgcgctct	gtctacatcg	cctcgctgtg	120
ataatgcata	tgtgtanata	cgccttcgaa	cctctctctt	gtgatgagtg	tgcgcgatgcg	180
ctacacagac	aacatcgtct	actactatgt	cttgctgttt	acatggcgcc	tgcgttntca	240
tentgtctca	cgtacgtgtt	cttgctgatg	gcgcagtcgn	cgcatgcacg	acgcacgcac	300
ganatcgagt	cactctcacg	gatactcacg	attcctcctt	acctcgttca	tcacnecgta	360
cactgntacg	agtctagcgc	gacgggagca	ctgtcctcac	ctcntatntc	gtgtaatgtc	420
gtctcgtcta	ttctctcatt	gtaa				444

<210> 4259

<211> 951

<212> DNA

<213> B.fragilis

<400> 4259

atgaaaaagg	gaattaagat	aggcgtcata	acattattat	tgctgcttac	cggatgtacg	60
------------	------------	------------	------------	------------	------------	----

ataggcggaa	gttttttcat	gtcgaattat	tcacttcgtc	cggaagcgaa	gatacgtgcc	120
aaaaatgctg	actcctatcc	tttcatatac	aagaattatc	cttttctgcg	tccctgggtg	180
gatagtctca	atcagggtca	tgcacttcgg	gacacttttg	ttttaaatcc	ggaaggtatc	240
cggctacatg	cttattacat	tgcagctccg	caaccaacca	aaaagacggc	agtcattgta	300
catggttata	cagacaatgc	cattcgcatg	tttatgatag	gttacctgta	taacctgat	360
ttacaataca	atgtactatt	gcccgaacct	caacatcagg	gggagagtgg	tgggtccgcc	420
atccagatgg	gctggaaaga	ccgcctggac	gtaatgcaat	ggatgcacat	cgccaaccag	480
atttacgggg	acagtaccca	aatggtagta	cacggtatct	caatgggagg	agctaccacc	540
atgatggttt	cgggagaggc	acaacottat	ttcgtaaaat	gtttcgttga	ggactgtggg	600
tacaccagtg	tatgggatga	attttcacat	gaactgaaat	cgagttttca	cctcccgta	660
ttcccactga	tgaatacaac	cagctggcta	tgccagaaaa	aatacggatg	gaattttgaa	720
gaagcctcct	ctttgaatca	agtaaaaaaa	agtcactctac	cgatgttttt	cattcacggg	780
gacaaagaca	catacgtgcc	tacatggatg	gtctatcctc	tttatgaagc	caaatcggcc	840
ccaaagcaac	tctggattgt	accgggagct	gcacatgccg	tatcttataa	agagaacaag	900
gaagaatata	cccggaaagt	caaagaatct	acagaccgct	acattcactg	a	951

<210> 4260

<211> 1050

<212> DNA

<213> B.fragilis

<400> 4260

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ggtgacgaaa	acgctactgt	acatacatct	gcaaagatag	aagaaggaat	accaggcgct	120
atctctttcc	tttccaatcc	gaaatacaca	ccttatatat	atgagactaa	agctagcatt	180
gtgttggtga	acaaagattt	tactcccgaa	caagaagtaa	aagcaacggt	aatcaaagta	240
gacaatgctt	acgagagcct	tgccaagtgt	ctcaatctgt	atgaaatgag	caaaccctaa	300
agaaccggta	ttgacgaacg	tgccatgtga	gcggaaccg	ctaaaatagg	aaaagacgta	360
tatatagctc	ctttcgcttg	catcggtgat	catgcggaag	taggagacaa	cacagtgatt	420
catccgcatg	ccactgtggg	aggtgggtgc	aagataggca	gcaattgtat	cttgtagccc	480
aactcgactg	tataccatga	ttgccgggta	ggtaataact	gtattctgca	tgccgggatgc	540
gtgatcggag	cagacgggtt	cggttttgcc	cctacccccc	aaggatacga	aaaaattccc	600
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tccggtagcc	aacttatcgg	aactcccctc	atggagctaa	aacaattttt	caaagcatcc	960
attgtacaaa	aaagccttcc	ggagatgcag	attgagttac	gcaatctccg	caaagaaata	1020
gaagaattaa	aacaacaatt	aaataagtaa				1050

<210> 4261

<211> 915

<212> DNA

<213> B.fragilis

<400> 4261

ccaatcgtta	tgactgccaa	aactttaatt	gtacttatag	gtcctacagg	tgtaggaaaa	60
acggagttaa	gcctccgcat	agcagaatat	ttcaagacga	gtatcatttc	gtctgactcc	120
cgacagttaa	acgccgaact	taagatagga	acggctgctc	cgaccccgga	gcaattaaaa	180
cgggttccac	actactttgt	aggtaccctg	caacttaccg	attattacag	tgccgcccac	240
tacgagacgg	aagtaatgag	tgttctcgaa	cagttatttc	aacaacatca	tgtcgtcctg	300
ctcaccggag	gctctatgat	gtatgtggat	gccatctgca	aaggcattga	tgacataccg	360
acagtatag	ccgagactcg	tgagctcttg	ctacataaat	atgacacaga	aggactcgat	420
aatctctgtg	ccgaactgaa	gctactggat	ccggtgtact	ataaaattgt	agatttaaaa	480
aatcccaaac	gggtcattca	cgccttggag	atctgttaca	tgacagggaa	aacttatacc	540
tctttccgta	cacaacaaaa	aaaggaacgc	ccgttccaca	tcctaaaaat	aggactgacg	600
cgagatcgcg	ccgaattata	tgatcgcatc	aaccgtcgtg	tagaccagat	gatgaacgaa	660
ggattgctgg	aagaagcccc	ctccgtatat	gcccaccgag	agttgaactc	cctgaacact	720

gtaggctata	aggaaatatt	taaatatctg	gatggagagt	gggatcttga	cttcgctatc	780
gaaaaaataa	aacagaactc	acgtatctac	tcacgcaaac	aatgacctg	gttcaaacgg	840
gatgaagaga	tcagatgggt	ccatcctgaa	caagagaaag	aatattatc	gtatcttcag	900
gtctcaatta	aataa					915

<210> 4262

<211> 795

<212> DNA

<213> B.fragilis

<400> 4262

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tattttagcct	atgatggcac	ccattatcat	ggatggcaga	ttcagcctaa	cggaatcagt	120
atacaagaat	gtctgatgaa	ggcacttgcc	accttcctaa	ggaaagatac	ggaagtgatt	180
ggggcgggac	ggaccgatgc	cggggtacat	gcgtctctga	tgggtgcccc	cttcgactac	240
gaaggtgaac	ctttggatgt	ggataaagta	gctgagaagc	tgaatcgtct	tttgcccgag	300
gatatttcgg	tctataaggt	ctgtcgggta	aagccggatg	ctcatgcaag	gttcgatgca	360
acagcacgta	cttacaagta	ttacattact	actgtaaaat	tcccgttcaa	tcgtcaatat	420
cggtatcggg	tacataatcc	gctcgacttt	caaaagatga	atgaggcagc	cctgacatta	480
tttcattatt	cggactttac	gagttttagt	aagttgcata	cagatgtaaa	aaccaatatt	540
tgtaaagatta	tgcatgccga	atggactcag	gaggatgaat	atacctgggt	gtttaccatc	600
caggcagacc	gctttttgcg	taatatggta	cgtgccattg	tcggtacgct	tctggaagtg	660
gggcggtggca	aactgtcagt	cgatgacttc	cgtaaaataa	tagagcagca	gaatcgctgt	720
aaagccggta	cttcagctcc	cggaaatgcc	ctcttcctgg	ttaatgtaga	atatacctcag	780
gagatattcg	aataa					795

<210> 4263

<211> 1128

<212> DNA

<213> B.fragilis

<400> 4263

aaaaaagtca	tctaccgatg	tttttcatto	acgggtgacaa	agacacatac	gtgcctacat	60
ggatgggtcta	tcctctttat	gaagccaaat	cgggcccaaa	gcaactctgg	attgtaccgg	120
gagctgcaca	tgccgtatct	tataaaagaga	acaaggaaga	atacaccggg	aaagtcaaag	180
aattttacaga	ccgtacatt	cactgatatg	aaacagatac	tcacatacct	gctctttata	240
tggatactcc	tcccactaaa	agcagaagaa	aaaatatata	ccgtagacaa	catccctaaa	300
gtacacttgc	agaacaagat	gcagtatgtt	tgtaatcctg	ccggcatctt	gtcacagcaa	360
gcttgtgacg	aaatagatgc	aatgctatat	gcactggaac	agcagacggg	gattgaaaca	420
gttgttgcca	tagtgccatc	gacggagat	aaagattgct	ttgaattctc	ccatcagcta	480
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gccatatgca	aacgtataca	aatgcaagag	atgatccct	atctcaagaa	aggagagtgg	660
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cgacgccaac	aatcgtatga	cgacaattac	cggggacgcg	gaggaggagg	tcttttcac	1020
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<210> 4264

<211> 693

<212> DNA

<213> B.fragilis

<400> 4264

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gaaccgcgca	atattaaagg	agtgggtgagc	tataaacgtt	cgtttggaga	tctgaatgat	180
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ttggccgaag	tcttgcgggg	tgttcgtaag	gcggataaat	gttatgtaaa	gtacgaattg	660
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<210> 4265

<211> 1023

<212> DNA

<213> B.fragilis

<400> 4265

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gcccagggca	atgtcatcaa	agtgtctggg	gatgaggaag	aaatgtgcgc	ttttgaggac	180
aatatcacca	agcttgaaaa	atattgtgcc	gaatacaatt	cgctgaaaga	agaagtcatt	240
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agcgtcacag	ggaaacccat	cattccacgt	agcgaatacc	aactgaaatt	agtggagggg	360
tttgccaaaa	acgatatggg	atttgctatc	ggaccggccg	gttcgggcaa	gacttatata	420
gcaatcgctc	tggccgttcg	tgcactgaag	aacaaagaaa	tcaagaaaat	aattctcagt	480
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aaaggagtga	aaggaatcag	ctttgtcgaa	ctgaataaaa	aagacattgt	gcgacacaag	900
cttgtagaac	gtatcggtga	cgcttacgaa	aagttcgata	aggaaaagaa	agccgaacgg	960
gaaaaattaa	acggtgaacg	gcttacaata	agtaaagaac	ggcaaacctg	tggtaatttg	1020
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<210> 4266

<211> 999

<212> DNA

<213> B.fragilis

<400> 4266

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caacttgacc	ggcttatgct	gaccttcggc	accgcatacg	tatacgaaca	aaaagagaca	420
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gagatagacg	agatagtaga	agactatacc	ctgctattgg	acgaattgat	ctctttgaat	540
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ttaggacaaa	ttgtgttaaa	aatagaacga	cttaacggaa	aatacccgta	cttagatttc	960

gaaaaagaaa caaacatgtg ccgattggcg cttcaataa

999

<210> 4267

<211> 240

<212> DNA

<213> B.fragilis

<400> 4267

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attatcatcc	tggttggttat	actcttgctt	tttggtggta	aaaagattcc	cgaactgatg	120
cgcgggctcg	gcaaaggagt	gaaaagtttt	aaagaagggg	tgaatgaagc	caaagaggaa	180
ataaaciaag	caaaagaaga	aatcgacgaa	ccggaaaaca	aagaaaagaa	agataactga	240

<210> 4268

<211> 186

<212> DNA

<213> B.fragilis

<400> 4268

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tatcacatga	ccaatcggtta	tgactgccaa	aactttaatt	gtacttatag	gtcctacagg	120
tgtaggaaaa	acggagttaa	gcctccgcat	agcagaatat	ttcaagacga	gtatcatttc	180
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<210> 4269

<211> 408

<212> DNA

<213> B.fragilis

<400> 4269

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ctggcatttt	atgatgagcc	aaaaccacat	ttcaatactt	tgtctacaat	tgtgcgcgga	180
ttggaagaga	agggcttttt	agcacatcat	acttatggca	atacctatca	gtattatgcg	240
gtagtccagc	aatcggactt	tagtaaacgt	acgctgaaaa	gtgtaattag	caagtatttc	300
aataattcgt	atctcagtcg	tgtgtcgtca	ttggtgaagg	aagaagatat	ttcgcttgac	360
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<210> 4270

<211> 1314

<212> DNA

<213> B.fragilis

<400> 4270

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ttcgggttta	tcaacatacc	aaaggggttg	ctgtacgaca	tcgtacggca	tccccctttg	180
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atgttgatca	gtgccctgtt	acgtgccaaa	gaactcgctt	cgaagaggag	cgaattatct	840
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tataaggacg	gaacaataaa	aaatattgca	gaagcatcgg	acatgctaaa	catttcattg	1260
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<210> 4271

<211> 864

<212> DNA

<213> B.fragilis

<400> 4271

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gcgaaacaca	gagttcacag	cccactccga	ttaatgcaca	ggagaacaac	ggttctcagc	180
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accaaccacg	taaaaataat	gagtctcgtg	aaccgcgtag	caacgagaac	cgggaaaacgc	300
gtaaaaacga	accccggtgaa	cagcgccctc	ctcgcgaaac	acgcggaccg	cgcaacaatg	360
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tgcatgctcc	ttaccacatg	ggttctgact	gcatgtgacg	aaaatactgt	gtatcactct	480
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ggaagtctgt	accaatcggc	actccctttg	aaggactggg	ttgttaaaca	tcccggcaac	780
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<210> 4272

<211> 525

<212> DNA

<213> B.fragilis

<400> 4272

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gcgattgggt	cggagggtt	gacgggtaaa	ggttttctga	atggtacaca	aaccaagctg	180
aaatatgtgc	ccgaacaaga	taccgatttc	attttctgta	ctgtgggtga	agaacagggg	240
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ttcctgttcc	atttgtttat	taacatcgga	atggtacttg	gtctgactcc	tgtaatcggt	420
attcogttgc	ctttcttttag	ttatggcggg	tcactctttat	ggggattttac	gattctgctt	480
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<210> 4273

<211> 348

<212> DNA

<213> B.fragilis

<400> 4273

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gggatcggtt	cgattaaagc	aagtatatag	acgattaaag	caggtatgag	tgtgattagg	180
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agagcaggta	taggtgtatt	taaagcaaat	gccgggtgca	tccggaagaa	catttgcgat	300
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<210> 4274
 <211> 303
 <212> DNA
 <213> B.fragilis

<400> 4274
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 atcattatgc tatcgggtat taatctttct ttcgaaaggc tatccccgag taaagggcag 240
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<210> 4275
 <211> 192
 <212> DNA
 <213> B.fragilis

<400> 4275
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 cctccgagag ccaaggcatc cgccatgcgc ccttatttac tttcttttat cgccagggat 180
 catttccttt ga 192

<210> 4276
 <211> 1089
 <212> DNA
 <213> B.fragilis

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 cgtcaggtag gcatcgaatg gtgcatcagc caatgcaaag agttgatggc agccgggtgtg 1020
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 atttattaa 1089

<210> 4277
 <211> 183
 <212> DNA
 <213> B.fragilis

<400> 4277
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 attcacgcag aattcctcgt gtcgcgcgt actcaggata ccactacgct tcggttacct 180

tag

183

<210> 4278

<211> 288

<212> DNA

<213> B.fragilis

<400> 4278

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cagtcgtttc	ttctcaataa	ctgtcttgcg	agagcgtggg	cctacaaccc	cacacatgcc	180
gtaacatggg	tgggtttgggc	taatccccgt	tcgctcgcca	ctactagggg	aatcattatt	240
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<210> 4279

<211> 1479

<212> DNA

<213> B.fragilis

<400> 4279

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<210> 4280

<211> 1113

<212> DNA

<213> B.fragilis

<400> 4280

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aaatccagcg	agggcggatt	taagattaca	ctcctctggc	tgccggaaaa	gatgcaacag	480
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<210> 4281

<211> 294

<212> DNA

<213> B.fragilis

<400> 4281

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<210> 4282

<211> 2487

<212> DNA

<213> B.fragilis

<400> 4282

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<210> 4283

<211> 978

<212> DNA

<213> B.fragilis

<400> 4283

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<210> 4284

<211> 1047

<212> DNA

<213> B.fragilis

<400> 4284

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<210> 4285

<211> 1449

<212> DNA

<213> B.fragilis

<400> 4285

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<210> 4286

<211> 3309

<212> DNA

<213> B.fragilis

<400> 4286

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<211> 2823

<212> DNA

<213> B.fragilis

<400> 4287

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<211> 675

<212> DNA

<213> B.fragilis

<400> 4288

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<211> 1320

<212> DNA

<213> B.fragilis

<400> 4289

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<210> 4290

<211> 3684

<212> DNA

<213> B.fragilis

<400> 4290

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<210> 4291

<211> 2445

<212> DNA

<213> B.fragilis

<400> 4291

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<211> 423

<212> DNA

<213> B.fragilis

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<210> 4293

<211> 255

<212> DNA

<213> B.fragilis

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<211> 963

<212> DNA

<213> B.fragilis

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<210> 4295

<211> 360

<212> DNA

<213> B.fragilis

<400> 4295

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<210> 4296

<211> 1647

<212> DNA

<213> B.fragilis

<400> 4296

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<211> 1599

<212> DNA

<213> B.fragilis

<400> 4297

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<211> 282

<212> DNA

<213> B.fragilis

<400> 4298

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<212> DNA

<213> B.fragilis

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<211> 2586

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<210> 4304

<211> 195

<212> DNA

<213> B.fragilis

<400> 4304

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<210> 4305

<211> 2022

<212> DNA

<213> B.fragilis

<400> 4305

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<210> 4306

<211> 630

<212> DNA

<213> B.fragilis

<400> 4306

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<210> 4307

<211> 3282

<212> DNA

<213> B.fragilis

<400> 4307

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<211> 1305

<212> DNA

<213> B.fragilis

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<210> 4309

<211> 2019

<212> DNA

<213> B.fragilis

<400> 4309

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<211> 216

<212> DNA

<213> B.fragilis

<400> 4310

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<211> 1557

<212> DNA

<213> B.fragilis

<400> 4311

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<211> 1590

<212> DNA

<213> B.fragilis

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 ttggtgaaag agtcgtaa 1158

<210> 4319
 <211> 1197
 <212> DNA
 <213> B.fragilis

<400> 4319
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 tttgccggag agaaagcccc tgtttcgttc gcgatcaatc aactcggcct gggggcaaag 180
 atgaaattgc gttttttccc ttacgaactg aagttgaagc atgtatttac cgtggccact 240
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 tatgtagatg gtctcactcc gggagatacg gctgccaaag ctgccatcga cattgcattg 480
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 aatcagggat ggacggataa gaaatatgca ttggacatga ttctgtggct gaaggagaaa 780
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<210> 4320

<211> 1356

<212> DNA

<213> B.fragilis

<400> 4320

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caacgattgc	tggcggattt	ctgcctgacc	gaatcccagg	tgaaagacta	tatccgcaaa	180
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tgccgggtga	tcgacggaga	gaaacgttat	ttccgcaatg	ccggtcccaa	cctgttccgg	300
atagactctg	cctgctgtgc	cgtcaaaatg	gagaaagagg	gtacttcact	gagcacgagc	360
gaacaggtca	ataaagaaca	tctgcccga	gtgatggctg	ctgtcaggaa	agaaaaaact	420
cctgtgggtg	agcccaaacg	catgcgggtc	acttatacgc	tgacgggtga	cagcaatgcc	480
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gccgacaatc	ccgaagaaaa	gatgttcttt	atgggaggta	tcgactcctg	gcgcatgata	1200
gtcaacagcg	attattccat	gccgctgggtg	ccggagaaga	aatatccgcg	tagtgaaacc	1260
gttgatttcc	agcgtggcga	gggtggagtgg	gaagggggca	acctgtactt	cccgcagtgg	1320
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<210> 4321

<211> 213

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (50)

<223> Identity of nucleotide sequences at the above locations are unknown.

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ggggataaag	actcagtggg	tgtaaacgaa	tttttgtcct	tgctccccaa	gggggtgaca	120
cggtttctga	acacccttat	atttctctct	tctcgtgacg	ccgacagccc	gaagaggtgt	180
gtgggtgttg	taaaaacgcg	atttgtgcga	tag			213

<210> 4322

<211> 1221

<212> DNA

<213> B.fragilis

<400> 4322

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ttgtccgggtg	aagtcgcgca	ccgcttcatt	cccagataagc	gtgtcatcct	ttgggatgtg	180
gattacgatg	tatccggaaa	gacgattacc	gtaaaggggg	caactacttc	gccggaagct	240
aaggcggctt	tgttatcggg	gctggaagag	aaggcttatg	aagtaaagga	cagcctgcaa	300

gcggtatgccg	gtgtgctggaa	gggcttcatc	atcctgaaag	ccaacgatca	gcctatgcgc	1440
aaagtcagcg	accttgaaga	agtgatgaaa	gctgctgtga	agtcaccgaa	ccaggctactc	1500
ttcctcacag	gagtattccc	ttcaggaaaa	cgcggctatt	acgctgtaga	cttgactcag	1560
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<210> 4325

<211> 408

<212> DNA

<213> B.fragilis

<400> 4325

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gcgttttctg	tgaaaaaagg	gggacataaa	cccgtttatg	cctttggggg	atcggcttca	120
tttaccgata	cggtgatata	ctacaccgaa	attcagatgc	ttgacagcgt	ggcgtggat	180
aaaaacggat	tcctgccgca	tagagaactg	tacagttatc	agttgaagaa	ttatttggaa	240
ttcgataaag	gacttcctaa	ccgtacttgt	atgatctatt	tctcggaaaa	taaaaagaaa	300
ttaggaaaag	aggccgccaa	ggttgtgggg	aaattcaaga	agaataaaaac	ggtggctgtc	360
gagaaaatcg	atcctcagaa	tttcgggttc	agtaaaccag	aagagtaa		408

<210> 4326

<211> 693

<212> DNA

<213> B.fragilis

<400> 4326

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tggaacattg	tttacaacca	gttggacagg	gcaggggagg	cagtgttgac	cctggataag	120
gaactggccc	agcaggtgat	tgtccgtgaa	cgcaggggtga	atgctttcga	attgaagata	180
gacagcgacg	tggaagacgt	gatcgcttta	tataatccgg	tagctatcga	ccttcgcttt	240
gtgttggcca	tgttgaaaat	caacaccaac	ctggagcgtc	tgggcgactt	tgcagaagga	300
atcgcacgtt	ttgtagtga	gagtgaagag	ccggttctgg	atgaagagtt	actgaaacga	360
ctccgtctgg	aagagatgca	gaaacagggt	ctttcgatgc	ttgaagtggc	aaaacgcgca	420
ttgaacgaag	agagcctgga	gctggcaacc	tccgtattcg	ctaaagataa	tttattggac	480
gagatcaatg	cggaggctac	ggctgttttg	gcagagtata	tcaaagagca	tccagaaagc	540
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ataacgaata	ttgcagaaga	gatagtcttt	ttcatcgatg	ctaaagtctt	gaagcatagt	660
ggcaaggtag	aagagcatta	tcctgctaaa	ttaa			693

<210> 4327

<211> 210

<212> DNA

<213> B.fragilis

<400> 4327

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aatgatctga	gtgatacaga	atgggctctg	cgggtaggag	acataaagaa	aacccatata	120
gctcttatcg	gaaacggaat	ttatttcacc	acagattaca	ccgattttca	cggattatat	180
catccgggtc	tcggtggaag	aaattattaa				210

<210> 4328

<211> 1320

<212> DNA

<213> B.fragilis

<400> 4328

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atgctgacag	ttgttctcgg	ggcatgggct	gtatttttct	atatagccgt	aatagatgaa	120
gtgaacgacg	aagtagacga	ctctctggag	gattactcgg	aaaccatcat	tatccgtgcc	180
ctggccggag	aagaactgcc	ctcgaaaaac	aatgggtcga	acaatcaata	ctatcttaga	240

aaagtaagca	aagagtatgc	cgacgaacgc	gaagatatct	gctacaaaga	ctccatggtc	300
tatatgtgg	agaaggaaga	gactgaaccg	gcacgcatac	tgaccacctt	attcaaagat	360
gacgaagggc	aatattacga	gcttaccgta	tcgacaccga	cgatcgagaa	ggacgacctg	420
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ttactgtcca	aaatagataa	cggacaattc	tccgataccc	gaacggtaga	gttcaacagc	900
atgctcaagc	gatatataga	agattataaa	gaagtatacg	gctatcggga	aattgagctg	960
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gaaataaccg	gtcatagcat	gaccttcagg	aatagcggcg	caggccgccc	cctggatgcg	1140
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cttgccatag	ccgactccat	ctgcaaatTA	cagcatctca	cactcaggta	ttatTTTtag	1260
aaagatgaac	actgtttcga	attgcggaag	aacaatttca	ccacagatta	cgcagattaa	1320

<210> 4329

<211> 1185

<212> DNA

<213> B.fragilis

<400> 4329

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cagcaggatg	ggccgacacc	tgaaccgagt	gtaggttgcg	gtaccgtgtt	agtgtatatg	120
atagcccaga	actctttggc	accgttggcc	tcggccgata	ttgaagagat	gaaagagggg	180
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aattaccggg	agcaaaattc	agccgatgca	aatgtgatga	aaaaggttat	atctactgcc	360
ttcaatcaat	ataaagcgga	gaagtatggc	atggtcttct	ggtcgacagg	tgagggatgg	420
ataccttctc	cggcaaagac	acgttggttt	ggtcaggacg	gcaataacta	tatggatata	480
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TTTTctgccg	aaaatgcagc	tttgaagatc	gcttctctgt	attatgatta	ctatcaaagc	720
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gttgccaaga	tgagtgaact	cgagaatctg	gctgttgcaa	cgtccaaagt	gctgcccagg	840
tatatcaccg	ggaacagaa	tttTgatctt	tccggagtga	tgtgttatga	tcgccgcaact	900
gataagcaat	attattatga	tttagaccgg	ttcatctatc	agataactgc	agggaaacggc	960
gattatgata	gttggcgggg	ggcgttcgat	aaggtaatgg	tttactggaa	atccactccc	1020
cgcaactatt	ctgcctacgc	cgggatgttc	acgatgaatc	aggatacgaa	agggctttct	1080
acctatattc	cccgatatgtc	cgtccggtcg	ttgaataact	cttaccagca	gactgaatgg	1140
tataaggtat	ccggttgggc	ggataccggg	tggtataaga	attag		1185

<210> 4330

<211> 288

<212> DNA

<213> B.fragilis

<400> 4330

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actacgaata	aacaacttaa	aatcgctctc	gtgttactct	gtgtgctctg	tggtgagtat	120
ggccatacca	gcgaatcgcc	tgccgaaaaa	gtattcggtg	gcttaataat	agctaaggaa	180
atcgaaaaga	gggtaccggc	aatcaaccag	tcggtactct	TTTTgtttat	attagtagat	240
aataatgggtg	aaaaagttgt	gaaaatttat	acgttaacaa	ataaatag		288

<210> 4331

<211> 906
 <212> DNA
 <213> B.fragilis

<400> 4331

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attaccaaaa	gtatcactaa	cagagagagc	gcttctcttg	acaagtatct	gcaggaaatc	120
ggctcgcgagg	acctcattac	tgtagaggag	gaagtagaac	tcgctcaacg	cattcgttaag	180
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ggactgatca	aagctgccga	gaagtttgat	gaaacacgtg	gcttcaagtt	tatcagttat	360
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cgccttccgt	tgaaccaggt	cggttcgttg	aataagatca	gcaaagcctt	ctctaagttt	480
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gcagaccgtt	ctctggttaa	tgagtctctt	gcgagggaaa	ttgatagagc	tctttctacg	720
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acattagagg	aaatcggcga	caaatttggg	ctcacacgtg	agcgtgttcg	tcagattaaa	840
gaaaaagcaa	tcagaagatt	aagacaaagt	aatcgtagta	aattgctcaa	atcttacttg	900
ggataa						906

<210> 4332
 <211> 618
 <212> DNA
 <213> B.fragilis

<400> 4332

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atagatcaga	gtatctctca	caatgggggtc	tgccgtgaccg	tggctcagcat	gactgaagat	180
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attgtgcagg	gacatgtgga	tcagaccgcc	gaatgtatcg	atatcaaaga	tgacagcggg	360
agctgggtatt	ttacgtttta	atatgctttc	gacaaggaga	tggccaagcg	cggctatatt	420
acggctcgata	agggttcggg	tacgggtcaac	gggtgcagcc	tgacgggtatg	caacccgact	480
gacgatactt	ttcaggtggc	gattatccca	tatacctacg	agcataccaa	tttccatact	540
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atgatccagt	acaaataa					618

<210> 4333
 <211> 1584
 <212> DNA
 <213> B.fragilis

<400> 4333

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tccggttaacc	tgcaagccgt	atccgagatt	gagttgtttc	ttcaagtcgt	ccggcaactc	180
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cacttttatcg	cccggacgat	gctgtgcaat	ggcttctctg	aggctcggca	agttctgcac	360
tttcttgcca	tcgataccga	tgatgacatc	atctaccttg	atatcggaac	cggcagcaga	420
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gccgccatta	ccgaagatat	ccccgaatat	ctctgcaaac	gggtcgcgta	cggtcacagt	1200
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cgtatagggt	gtcactccgg	caactcctgc	actgagaaga	actactgctc	ctatcccag	1440
aatgtttttt	gttgtctgtt	tcatactatt	ctttttattc	atttaattgt	taatatctta	1500
ctttcattta	acatttacga	cgttaaaaata	acgacaaaaa	tcattctgtt	attctccttg	1560
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<210> 4334

<211> 387

<212> DNA

<213> B.fragilis

<400> 4334

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gaaggtcagt	ctatgaccgg	ttatttcaat	ccggatatgc	ccaccgtcta	cgttgtgtac	180
aaacgcattt	ttgagcaggt	tcgttatcag	ggctactgcc	agcgattcat	tcactctccg	240
ccggaatatt	ccctgttcat	ccagcgtcag	ctcaatttcc	cgatagccgt	atacttcttt	300
ataatcttct	atatatcgct	tgagcatgct	gttgaactct	accgttcggg	tatcggagaa	360
ttgtccgtta	tctatttttg	acagtaa				387

<210> 4335

<211> 570

<212> DNA

<213> B.fragilis

<400> 4335

ggtggaccgg	ggagtagagg	tgaaaaaagt	atgaacgact	ttctgcaatt	ggtaaatgcc	60
cggcaaagtg	acagggctta	cgataaatcg	cgtcttgttg	aggcggataa	gctggaacgc	120
atccttgaag	cgggacggct	ggcaccttct	gcctgcaatg	cccagccttg	gaggttcgtg	180
gtagtgaccg	atccgtcatt	ggcggagaag	gtcggtaagg	ctgctgcggg	cttgggaatg	240
aataaatttg	ccaaggatgc	tcgggtgcat	atcctcgttg	tagaagagtc	tgccaacatt	300
acttcgcggc	tgggcggaaa	actgaaggga	aaacattttc	cgttgatcga	tatcgggtatt	360
gtggctgcac	acatgggtgct	ggctgccgaa	agcgaagggc	tgggatcatg	tatactcggc	420
tggttcgatg	aaaaagagat	aaagagcctg	accggtattc	cctcttccaa	gcgtgtattg	480
ctggatatct	tgatcggata	tccggtgaaa	gagaaaacgaa	agaagatccg	gaaagaaagc	540
gggaaaatta	tttcttataa	cagctattaa				570

<210> 4336

<211> 378

<212> DNA

<213> B.fragilis

<400> 4336

accctgaagg	gtgccgcgct	ttgggatgaa	gtgaaggaca	aactgaaaga	atcggctttt	60
gccttgtccg	gcggacagca	gcagcgtctt	tgtatcgcac	gcgcaatggc	tgtatcgcct	120
tcgggtgctgt	tgatggacga	acctgcctcg	gcgctcgacc	ctatttcgac	ggcaaagggtg	180
gaagagttag	tacacgagtt	gaaagaacgg	tataccattg	tgattgtgac	gcacaatatg	240
cagcaggctg	cacgtgtcag	tgataagacg	gcgtttttct	atatggggca	gatgggtggag	300
tttggcgaca	cgaagaagat	ctttacgaac	ccggagaagg	aagcgacaca	aaactatata	360
accggacgtt	tcggatga					378

<210> 4337
 <211> 1356
 <212> DNA
 <213> B.fragilis

<400> 4337
 ctgcttttct tttttttaat ttcaaatacc agacctatga atcagcgtct ctccgatata 60
 tggaaattca ttacctatga tatctggcgg atcacggaaa gcgaagtcac ccgcaccaag 120
 ttctcgatat acaatatcat caaaacgacg tatctctgcg tcaaccgctt caacaaagac 180
 cgcattgtca ataaagcctc agcgtgacg tacagcaccg tgcctgccat tgtgccata 240
 ctgcgcacg tctttgccat cgcgcgcgga ttccgggtct ccactttgat ggaaagccag 300
 tttcgtgatg gcttcggagg atccaccgag gcgacggata ttatcctgca attcgtagac 360
 tcatatctgt cacagaccaa aaacgggtatt tttatcggag tcggcctggg catgttgctg 420
 tggaccgtac tcaacctggg cagtaacatt gaaatcacct tcaaccgcat ctggcaggta 480
 aagaaagggc gcagcatgta ccgcaaaatc accgattact tttcaatggt cctattgatg 540
 ccgatcctga tcgtagtatc gggcgggtctt tccatctttg taggcacgat gctgaagagt 600
 atggcgggatt ttgttttact tgcccctatc ctgaaattcc tgatccgtct gattccgttc 660
 gtgctgacct ggctgatgtt tacgggactc tatatcttca tgcccaatac caaggtgaaa 720
 ttcaagcatg cactgatctc cggcatcctg gccgggtcgg cttatcaggc atttcagttc 780
 ctgtacatca gcagtcagtt gtgggtgtcc aaatacaatg ccatttacgg tagtttcgcc 840
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 gagctgacgt atgcccggcca gaacatccgc aacttcagtt tcgacagaga tacgcagAAC 960
 atcagtcgcc gttaccgca tttcatatct atcttaatca tgtctcttat agccaaacgt 1020
 ttcgaaaaca acgaaacgcc ttacaccgcc gaagagatat ccgaagaaca tcgcatcccg 1080
 attcggctga ccaatcagat actttaccaa ctgcaggaga tacacctgat tcacgaagta 1140
 gtcaccgatc aaaaaagcga ggatatcgca taccagcctt ccacgcacat taatcaactg 1200
 aatgtagcgc tattgtctga ccggctggac acatacggct cagaagattt taaagtcgat 1260
 aaagacgagg aattcagcga gcaatggaag gttttgcttg actccaggga agaattattat 1320
 aaaaaggcaa gcaaagtatt gctgaaggac ttgtag 1356

<210> 4338
 <211> 474
 <212> DNA
 <213> B.fragilis

<400> 4338
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 gtatgcctgt tcactctgca aaccatcgca agagcggacg atgataaacc gattcaagta 120
 agccagatgc cgcagaaggc acagcagttc atcaaacaac actttgccgg cagcaacatt 180
 gccatggcca aagttgaaag cgatttctta cagaaaaagc acgatgtcat cttcaccgac 240
 ggcaacaaag tagagttcga caagaaagga aactggactg aagtaaattg caaattcagt 300
 gtagtccac agggcatcat cccctctcct atccaaaaat atacagccac taattatccg 360
 gacgctaaag ttctgaaaat agaacgcgat aaaacggatt atgaagtga actatccaat 420
 ggttgggaac taaaatttga ctctaaattt aatttaatcg atattgataa ctaa 474

<210> 4339
 <211> 852
 <212> DNA
 <213> B.fragilis

<400> 4339
 aaaagtatag tagatatgaa attgaaaatg tattttcttc ttctagcact ggggtgccctg 60
 ggattacaaa gctgtaatga cgatgacgat catctgtctt ccgtgcccac ggaactgaaa 120
 aacgcattta cggaaaagta tccgtctgtc agcaacgaaa agtgggaaac aaaaggcaac 180
 tattacatag cggaaattccg tcaacagaac tacgaaacct cggcctgggt tactccgaac 240
 ggaatatggc aaatgacaga gaccgacctc ccttatcagg ctctgccggc agctgtgaag 300
 agtgcattcg aaagcagtga atacgccaa gggaaagtag acgatgtgga catgttgga 360
 cgtccggaca tggagaaggt atacgtcatc gaggtagagt ccggaaagca ggaattcgac 420

ctgtattact	cggaagaggg	tatcctggtg	aaaagcggtg	cggatacggg	caacgattca	480
gagaactatc	tgccctgccg	gattccggca	gccattgaga	cctttatcaa	aaagcaatat	540
ccaaacgcac	gcctggctcg	gacggaagt	gagcacggga	tgactgaggt	agacatcatc	600
gacggtaata	tcagtaaaga	aattgtattc	aacagctcta	acgaatggat	atctacttct	660
tgggacgtac	gccgcaacga	actaccggaa	acagtgacct	atgcatcg	ttcttcagag	720
aaatatgcgg	gatatcaaat	cgatgacgca	gactttggtg	aaacaccggg	aggagaatat	780
tatctggttg	aactggaaaa	aggagaattg	gaagtgaag	taaagggtga	cgctgaagga	840
gagtttatct	ga					852

<210> 4340

<211> 711

<212> DNA

<213> B.fragilis

<400> 4340

gccttttctt	tgccaggtaga	aataaaaagc	cctatgaaaa	tattaataat	cgaagacgaa	60
ccctcactga	gggaactgat	ccagcggtcg	ctcgaaaaag	aacgctatgt	agtggagct	120
gccgcagact	tccagtcggg	attacgcaag	atagaggact	acgattatga	ctgtgtcttg	180
ctggacatta	tgttgccctg	cggcaatggg	ctgaacctgc	tgagcaact	gaaaaagatg	240
cgtaaacggg	aaaacgtaat	tatcatatcg	gccaaagact	ccctggacga	taaagtactg	300
ggactggaac	tgggtgccga	cgactatctg	cccaaaccct	ttcacctggc	cgaattaaat	360
gcccgcacga	aaagtgtgat	ccgacgccag	cgccgcgacg	gagaaatgga	catacgcttg	420
gccaacatac	gtattgtccc	cgatacattc	caggtattcg	tagatgacaa	ggaaatagaa	480
ttaaaccgca	aagagtatga	tatccttctc	tactttgccg	accgtccggg	acgactggta	540
aacaaaaaca	cgcttgccga	atcggtgtgg	ggagatcata	tcgaccaggt	agacaatttt	600
gatttcatct	atgcgcaaat	caagaacctg	agaaagaaac	tcaaagatgc	cggtgccttg	660
gcagaactga	aggctgtata	tggattcggc	tacaaaatga	ctgttgaata	a	711

<210> 4341

<211> 285

<212> DNA

<213> B.fragilis

<400> 4341

ttatcgccga	cgcatatttt	aagtgttaata	ggactatata	taggggtgtaa	gaattcaata	60
gaattaacgt	ttaagagtga	gaaagatatt	atgcgcgtga	tagatactgt	aactattact	120
atctcgaaaa	tggagattga	tttacctaaa	atagagattg	ttaagcaatg	tggatgatt	180
gctgctaata	ctgtcttttt	aataaatagt	ttgacttcta	atattccata	tatgtttttg	240
gataggctca	ggggcgtaaa	agttacttgg	gataaaaata	aatag		285

<210> 4342

<211> 1158

<212> DNA

<213> B.fragilis

<400> 4342

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gctagttttg	caccaatttc	taccccaagg	gcaaataagag	caactgaact	ggcgaaagaa	120
tttgcgaaac	aagggtgttt	agttacagtc	tataattgta	cttcggttgt	agatggcaca	180
tttaatatata	atgaaaatat	tagagtgtgt	gatttgaata	tacgtaaagc	tagtattatg	240
aaatcttcaa	ctaaaaataa	tgttacatat	accattttag	ataaaggat	tatttttgatt	300
agaaaaattag	tatattactt	tttcttgggt	tcattggctgc	tttatttatt	tggcttaaaa	360
aagaaactaa	gatttgatga	taaatatgat	ttattaattt	ctataggact	accttttaca	420
atccattggg	gggtatcggt	aagaatacat	ggacataata	tagcaagatg	ttacgttgct	480
gattatggtg	atccattttc	gagaggtaat	gataacttga	aatgtgctaa	gtattttcaa	540
tggatagaaa	aaaaagtaat	agataaattt	gattatataa	ctatttcctac	ttacaatgca	600
atagattctt	atacttgggt	aaaaagttcg	gattgtatta	aagttattcc	acaaggattc	660
aattttttctg	aagttaagac	acttgattat	gtacccaata	aaatacctac	atttatctat	720
gctgggtattt	tctattcgga	tatacgaaat	ccaaagaatt	tatttgatat	tctacttaaa	780

ttagatTTTTg	atttttGttt	tattatttat	acggtaaaaag	gtcttcaaga	tagttattca	840
tgtataaaagc	cttatatcga	taaacttggt	agtaagttag	ttatatatga	ttcaattcca	900
agattagctc	taatagaaaa	gttgagtgt	gctgattttt	taattaatat	gagcaatact	960
tcagccaatc	agatacctag	taagttgatt	gattatgctc	tatctcacag	acctatttat	1020
tcttgtacac	ctaattctat	tgacttagat	aaattaatta	gcttttgtaa	gggagattat	1080
accggttctg	aaaatatcaa	ccttagagat	tacgatatta	ctactatagt	aaatagtttt	1140
ttttctttaa	tgcaataa					1158

<210> 4343

<211> 1296

<212> DNA

<213> B.fragilis

<400> 4343

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tcaatcatgg	agaaatttga	ctccatgctt	tcacccggtta	tcgactcaac	actggggtcag	120
agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcggtt	180
tatttctgtg	gcggtcatg	cgtggaagat	gtaacgtcac	aactgatgcg	ccatctctcg	240
tatcatccta	cccttcgtac	atgcagctct	gataccatcc	tcagagccat	caaggaactg	300
acacaggaaa	acatctccta	tacttccgac	caaggcaaga	cctatgattt	caatactgca	360
gacaaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatacg	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
cgcacctaca	aaaagttcct	cggctacagg	cctggcggtat	atgttatcgg	tgacaagata	540
gtctatatcg	agaacagcga	tggtaacacg	aatgtgcgtt	ttcatcaggc	agacacccat	600
aagagattct	tcgctcttct	ggaatcccag	aacatccgtg	taaatcgctt	cagggcgagac	660
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atccgtgcca	accgatgcag	ttcgctctac	aatgacatct	ttgctctgag	aggatggaag	780
acggaggaga	ttaacggcat	ccagttcgaa	ctcaattcca	ttctcggtga	gaaatgggaa	840
ggcaagtgtc	atcgtcttgt	catccagaga	caaagacgca	acagtggcga	ccttgacctg	900
tgggaaggcg	aatacactta	ccgttgtatt	ctgaccaacg	attacaagtc	atcgacaagg	960
gacattgttg	aattctacaa	tctgcgtggc	ggcaagggaac	gtatctttga	cgacatgaac	1020
aacggattcg	gttggagcag	gctccccaag	tcattcatgg	cggagaatac	tgtctttctt	1080
ctgcttactg	cattgatata	caatttctac	aagaccatca	tgagcagggt	tgacaccaag	1140
gcttttgggc	tcaagaaaac	gagtcgcata	aaggcttttg	tcttcagatt	catctccgta	1200
cctgccaaagt	ggatcatgac	tgcaaggcaa	tacgtgctga	atatctacac	agagaaccga	1260
gcttatgcaa	aacccttcaa	aacagaattc	ggataa			1296

<210> 4344

<211> 624

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (557), (601), (602), (603), (607), (608), (620), (621)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4344

tatgacatgg	caaaaataca	aattaaatct	gagaaactca	caccttttgg	aggaattttt	60
tcaatcatgg	agaaatttga	ctccatgctt	tcacccggtta	tcgactcaac	actggggtcag	120
agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcggtt	180
tatttctgtg	gcggtcatg	cgtggaagat	gtaacgtcac	aactgatgcg	ccatctctcg	240
tatcatccta	cccttcgtac	atgcagctct	gataccatcc	tcagagccat	caaggaactg	300
acacaggaaa	acatctccta	tacttccgac	caaggcaaga	cctatgattt	caatactgca	360
gacaaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatacg	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
cgcacctaca	aaaagttcct	cggctacagg	cctggcggtat	atgttatcgg	tgacaagata	540
ggtcttcaca	acggggntgg	aagtatcagc	atcgtagcta	ttcaaggggc	catcgttccc	600
nnnccnncc	gggccccatn	nccc				624

<210> 4345
 <211> 276
 <212> DNA
 <213> B.fragilis

<400> 4345	
aggcataatt ttttctcctt ctttactaat gttactacta cgtttcattc atgtttcggt	60
gatcaacact gcaaagatga agatttacia attatcggca aaggaaaaaa cgggccggaa	120
agcagttttc tcagaaaaac ttataacacg cttattatct gtatcataat tctaagctct	180
tcgttcaaaa cagggtgcata cacatgtacc caatatcagt taagtttttag ttcacccgac	240
aaatgcatag ttccaatata gaaagtctca caatag	276

<210> 4346
 <211> 954
 <212> DNA
 <213> B.fragilis

<400> 4346	
gttatgtact atttaataat cctgggttctg ctatttttgg cagaactttt ttattttccgt	60
attgctgata aatgcaatat catcgataaa ccgaacgagc ggagttcgca caccgggac	120
actttgagag ggggaggaat tattttcttc ttggcgcat tagcttactt tctgacgaat	180
cagtttgagt atccttgggt tatgctggct ttgacattga ttacttttat cagttttgta	240
gacgacattc gttctacttc tcaggggtta cgtttggtgt ttcattttac ggcgatggct	300
ttgatgttct atcaatgggg gttattcagc ctgccttggg ggaccattgt ggttgctttg	360
attgtttgca cagggattat caatgcctat aattttatgg atggtattaa tggcattaca	420
ggtggatact cgttgggtgg gctggcgga ttagcattta taaatgggg atatgttcca	480
tttgtagagc cggctttgat ttataccatg ctttgtgctg tgttggtctt taacttcttc	540
aatttccgga aacaggcaaa gtgttttgcg ggggatgtag gttcgggttag cattgctttc	600
gtgacccctt ttctgatcgg tatgctgata atccgtacgg aaaatttcag ctggattgtc	660
ttgttggcag tctatggggg ggatagtgtg ctgacaataa ttcacgggt gatgttgc	720
gagaatattg gtttgccaca tcggaaacat ttgtaccaga ttatggcaaa tgagctgaaa	780
attcctcaca tgggtgggttc gttgggtgat atgttgggtg aggcagtagt tatagccggg	840
tatcttctat tcccggggaa tgaatatggg tatttgcgg gtaccattat tgcgctgagt	900
ttgggtctata ttctatttat gaagcgtttc ttttgcctgc atcaagcgaa gtga	954

<210> 4347
 <211> 762
 <212> DNA
 <213> B.fragilis

<400> 4347	
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gatattataa cgtgttattc atctattatt ggtattatac cttctaattg gcaatgtgaa	120
gtgattgttt cttctaattc agtttatcca ttaaagcagc aggaggaact taaaacttta	180
tataaagata ttaaatggag gtttaacgaa aagaatgggg gatttgctta tgctatgaat	240
caagggttat caatagcaga tgggtgatatt cttgtaataa tgaatcctga tgttaggctg	300
aaaacgggaa ttgaaaagat ggtaacttat ttgtactccc ataataaat aggagttatt	360
gctcctaaaa taataaatat taatggtaaa atacaagata gctttcggga ttttattaca	420
ccaatgaact tcataaaacg acatttgagc cgtatattca aatctactaa tcagattggg	480
attattgagg tcattagtca agtggattgg gtaattggag cttttatgat gatgccgct	540
caagcttatg aggtagttaa agggttagat gaatattatt ttttatattg tgaagatatg	600
gatttctgta agaggatata attggaagg ttttctgttg tttattacc tgaagtgaa	660
atagaatatg aaggaacacg ctctgcaaga cggtcgttga aatatgcttg catatttttt	720
aagtcattgt tacgatattg gactaaattt ggattcaatt ag	762

<210> 4348
 <211> 276
 <212> DNA

<213> B.fragilis

<400> 4348

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ctggaacggg	atttaacgaa	ccgttctgat	gtatatatgc	ccttggagag	tatcatgttc	120
gctggctaca	acgcttacgt	gtttataggt	gatgagttaa	agtctgctac	gtttaaggat	180
acggagcacc	aggtttgcag	gtccatacga	aaagttgaaa	accgcaccgg	agaacgtttc	240
aaactatctg	aaagaggcgg	tcaattacct	cgataa			276

<210> 4349

<211> 219

<212> DNA

<213> B.fragilis

<400> 4349

ttgagtttgc	aacactgtcc	ggttgtaact	gctgaggggc	atgtattgat	atttgacaat	60
ggatatggat	gtaatttttc	tgatctaat	agacatagtc	ggggtgagta	taaaatagta	120
ggtcttgatg	tagagcaaat	ttgggagtat	ggtaaagaac	gaggcgaaga	ttttttctct	180
cctattacta	gtgaggtaca	atatatagag	gaatcttaa			219

<210> 4350

<211> 252

<212> DNA

<213> B.fragilis

<400> 4350

gttcctgagc	aacaaaaagt	tgcccaggat	tttgccatgt	cagaattttc	acttatctta	60
gtggttgcaa	aagaaaacaa	gcaaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 4351

<211> 252

<212> DNA

<213> B.fragilis

<400> 4351

gttcctgagc	aacaaaaagt	tgcccaggat	tttgccatgt	cagaattttc	acttatctta	60
gtggttgcaa	aagaaaacaa	gcaaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 4352

<211> 390

<212> DNA

<213> B.fragilis

<400> 4352

gatcccctaa	attcaccatc	cgtaagtata	atagcttttc	caataatagg	atgctctaag	60
aacatttttt	taccatcttc	gtatataaga	tctctaccag	aagatgtttc	taaggcactg	120
ccaagctcaa	aaagagtcac	tgtgcgttca	ataaaagggc	tgttaaaaata	ttccttaaaa	180
aataagtcta	tactatctaa	gtttagtaat	agcactatga	aacaaaaggc	agtcgttaaa	240
ataatcttaa	aatttcagttt	caaacagaga	tataatgcta	aatggcaaaa	taacgcaaca	300
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aaaagccatt	tccattttatt	tcttttatag				390

<210> 4353

<211> 1053
 <212> DNA
 <213> B.fragilis

<400> 4353
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 ctaattacgt cagtgggtct tataattttt atctattgtt tctgtcttct ttttttgagc 180
 tcgcatagga ttttacctat taaaataaga aatatggata ttctattgat tatctttttt 240
 tttatttatg gagttcggat gtactataac atattttag agcaacttta tcagttatta 300
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 <212> DNA
 <213> B.fragilis

<400> 4354
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 aataatgtta gttttgagat gctctataaa tctcagaaaa tggatatgac atttagaatg 180
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<210> 4355
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 <212> DNA
 <213> B.fragilis

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 gggaatgaaa tatttgctta tctaaaggat ggtaattatc cgattgataa gaactctgct 180
 gaacgaagta ttcgcaact tatcacgtag 210

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 <212> DNA
 <213> B.fragilis

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 tttaatgtaa tactagctat agtggctata ttttcagtag tagcgacgaa tttgggagct 180
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<210> 4357

<211> 516

<212> DNA

<213> B.fragilis

<400> 4357

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aaagttggaa	aaatggtaac	ttcacaacag	ttggccgaag	taatagctga	aaaatcatcg	180
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cgttgctctgt	ttactccgga	atatactcgt	cccgcagcta	tcggcactac	ccgtgctttg	420
cttcagggag	tggaattcca	gaaagtcagt	gcgatagggg	gagcaattaa	tggcggatcg	480
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<210> 4358

<211> 189

<212> DNA

<213> B.fragilis

<400> 4358

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atatcattgt	tgccgataat	cggcatggag	caacgtataa	atgattgcct	gagttgccca	180
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<210> 4359

<211> 243

<212> DNA

<213> B.fragilis

<400> 4359

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actatacatt	gcctaatagg	attattttgga	ataaatccca	ccaccaagaa	aggtaatata	180
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<210> 4360

<211> 183

<212> DNA
<213> B.fragilis

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gttctttaat caaaagcaaa aacagctaata atagtacaaa atacgggata ctttaacctg 120
tctgagattt taatttttaa atctatcata tttcaatata tcatgatata tattatcaat 180
tga 183

<210> 4361
<211> 918
<212> DNA
<213> B.fragilis

<400> 4361
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gttgaacact atcaagaata taaaagttag ttatatcttc acatcattgt ggataacggg 120
tcagaagatg aatatatggc gcaactgaag tcaactttta cagattctat aattatcgaa 180
agaggtaaaa atggcgggtg tactcatgct tataatgatg gaattagata tgctcttaat 240
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cagatgaaac cttttgcagt agggcaaaat atcggtaatt taacaggaga tgaagtcaga 480
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<210> 4362
<211> 264
<212> DNA
<213> B.fragilis

<400> 4362
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aatgagaccg agttggacaa gaaagcgtg gaacttgtct tggaggattt tcttagtgcc 180
tggaacgata tgaaagctga actggctgag ttacaaagga gacaagacga aatggttttc 240
caaactacag gagtcagcct ctga 264

<210> 4363
<211> 234
<212> DNA
<213> B.fragilis

<400> 4363
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agcctaataca gtactgtgaa gatgcagggg cggttcgttt gggagtttct cagtaagttt 120
tttactaata tttttaacgg ttgcagagat tatttgaatc tctcaccaaa aatatcggac 180
tggaactatg caatagtaaa taaatcactg aatcttttaa caaaacaatt ttag 234

<210> 4364
<211> 984
<212> DNA
<213> B.fragilis

<400> 4364

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tatattattg	ataatggttg	tatccttcct	ttctatataa	aaaagaaatt	cctttttcgt	180
tatatgattt	tttcaacggg	tatattaaat	tgttcgtcct	ctgaacaaga	acaagtgttt	240
ttagaccggc	ttattccatt	tgtgaaagag	tcatttataa	ttgattttat	attatcgcaa	300
catgtaaatg	ctttgttttc	tattgttcct	cctagatctc	agtattgttt	gtttggctct	360
tatatttttag	acttgtcatt	gaccgaagat	gatatatggg	caaaaatgca	ctctaagcat	420
aggaatgtaa	ttagaaaagc	agagaaaagat	gggggtgatta	ttacttgagg	ggatgacaat	480
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aatgataatg	ttttttctaa	tttaggtaat	gttaagtatg	tggactattg	gctggctact	600
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<210> 4365

<211> 1017

<212> DNA

<213> B.fragilis

<400> 4365

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ggagtactga	aaacattttta	ttggaaagat	attaatccag	agtcattctc	attacaaaac	180
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gagaattatg	tggtaagtaa	tgctaagatc	aaagctgctc	tcgggattga	taaaatgcct	960
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<210> 4366

<211> 210

<212> DNA

<213> B.fragilis

<400> 4366

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gacattactg	ttggatgtag	cttggtgatt	gaggggccag	ctgaggtggc	actacattgg	180
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<210> 4367

<211> 1038

<212> DNA

<213> B.fragilis

<400> 4367

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acgtcatcta	aagctacttt	ttttattgat	actattttatt	tgaataaact	tagaaatagt	180
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<210> 4368

<211> 717

<212> DNA

<213> B.fragilis

<400> 4368

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<210> 4369

<211> 804

<212> DNA

<213> B.fragilis

<400> 4369

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804

<210> 4370

<211> 1002

<212> DNA

<213> B.fragilis

<400> 4370

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<210> 4371

<211> 1779

<212> DNA

<213> B.fragilis

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agcggttcgg aatatctggt aagtgattcg aaggtagata aaagacactc cgaacaggct 1680
tggggaatca actttgatgc tacgaatccg ggcaatgcgg caccctatga caaaacaacg 1740
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<210> 4372
<211> 195
<212> DNA
<213> B.fragilis

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<400> 4372
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tatatcgaag ttacttcggt tggtaatgct ccttgcggtg gtgctgttat tgtcttcctg 180
ccgtcaggac gatga 195

```

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<210> 4373
<211> 645
<212> DNA
<213> B.fragilis

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<400> 4373
ggagttcgct gtggaaaaag gatacctgaa ccttattatg gtctacccga gccaccacag 60
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tacagcctgc catgcggcac ttaccggagc gggcagacga gggctctggt gcaggaaact 180
gaggggtatg tggaaactgta cagcaaggag acgggaaaaa tcgtcgccag acatcccctc 240
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<210> 4374
<211> 372
<212> DNA
<213> B.fragilis

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<220>
<221> unsure
<222> (365), (366), (367), (368)
<223> Identity of nucleotide sequences at the above locations are unknown.

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attgaagggt ttgccaaaaa cgaatatatt tttggcatgt ctgtcaccaa agataatgca 300
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caatnnntt aa 372

```

```

<210> 4375
<211> 219
<212> DNA
<213> B.fragilis

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<400> 4375
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ctctaccaca	aagacgggat	aagaatccct	tataaagggg	atttcaagaa	caatccccat	180
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<210> 4376

<211> 2259

<212> DNA

<213> B.fragilis

<400> 4376

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gcccgcctcg	gacgggtgtc	ggaaaattgt	aaatgggtgc	cccagtcgtc	tcactacaag	240
accaaggccg	atgtatacga	tctgggtgagc	gcagaagagt	gcctgcgaca	agcaaaatac	300
aacgaagcac	aaggggtcaa	ccgcttttca	ttgggtgacca	gtggacgcaa	accttctccc	360
aaaaacatga	aagagctctg	tgtagcggtc	cggcggatgc	gtcgccattc	gtctatccgg	420
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ggcactccgc	tcgagcatca	gtctcctctc	agtgaagaag	agatactgac	cactgtggct	780
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<210> 4377

<211> 1470

<212> DNA

<213> B.fragilis

<400> 4377

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tcattatggc	aacagggcaa	ttcgctttat	gtagacatga	agatcgatat	gaaaaatctg	180
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cagccgactg	tggaggtggg	gaaaaaccgt	agcgaacagt	atgaagctca	cctcgacttt	600
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gccttcaacc	aagctgcca	gatgggtaac	gaggccgcta	aagccaacct	acagcaactg	1440
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<210> 4378

<211> 573

<212> DNA

<213> B.fragilis

<400> 4378

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ccaaactgga	agacaaacct	tgggaggcgt	tcaaagtgtc	gtttggtaaa	gaatcgtcta	120
ccgaagtgtc	ttacaaggac	taaactgatg	gactattcct	gcaaggggca	gtttggtaac	180
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ggagtcgttt	ctgtggctat	cacagacgcc	atcgatttac	aaaagacgta	tgtacactat	480
aactgcggca	ttcgctatgg	gcacgattcg	gctaggacgg	atctcaaaat	gtcgaagatg	540
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<210> 4379

<211> 423

<212> DNA

<213> B.fragilis

<400> 4379

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atgattatgg	gattaggaac	atcagtagcg	tttgccagtg	tatcgggtga	cacttttagca	180
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ttcgtttcgg	aaagagaaa	cggtaaggta	tataaagtga	ttgtgactgt	aatcaaggaa	360
gatcaatcta	cgggaagatg	aactgttctt	ttgaatgaga	aaggtgagat	agtgaagaa	420
ttaa						423

<210> 4380

<211> 1365

<212> DNA

<213> B.fragilis

<400> 4380

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<210> 4381

<211> 423

<212> DNA

<213> B.fragilis

<400> 4381

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<210> 4382

<211> 183

<212> DNA

<213> B.fragilis

<400> 4382

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<210> 4383

<211> 390

<212> DNA

<213> B.fragilis

<400> 4383

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actaccgtac	ctaccggtac	cgtatcgct	tctttaaaca	atatttccac	cacttttccg	180
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<210> 4384

<211> 3132

<212> DNA

<213> B.fragilis

<400> 4384

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<210> 4385

<211> 603

<212> DNA

<213> B.fragilis

<400> 4385

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<210> 4386

<211> 225

<212> DNA

<213> B.fragilis

<400> 4386

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<210> 4387

<211> 222

<212> DNA

<213> B.fragilis

<400> 4387

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<210> 4388

<211> 1569

<212> DNA

<213> B.fragilis

<400> 4388

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<210> 4389

<211> 1380

<212> DNA

<213> B.fragilis

<400> 4389

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<210> 4390

<211> 207

<212> DNA

<213> B.fragilis

<400> 4390

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gtatctctgc	tcctgaaagg	gtaccaatgg	attgtatgga	ggggtaactg	ggatgtaacc	180
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<210> 4391

<211> 870

<212> DNA

<213> B.fragilis

<400> 4391

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<210> 4392

<211> 252

<212> DNA

<213> B.fragilis

<400> 4392

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<210> 4393

<211> 1218

<212> DNA

<213> B.fragilis

<400> 4393

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<210> 4394

<211> 1692

<212> DNA

<213> B.fragilis

<400> 4394

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<210> 4395

<211> 1668

<212> DNA

<213> B.fragilis

<400> 4395

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<210> 4396

<211> 459

<212> DNA

<213> B.fragilis

<400> 4396

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<210> 4397

<211> 1326

<212> DNA

<213> B.fragilis

<400> 4397

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 <212> DNA
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 <212> DNA
 <213> B.fragilis

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<210> 4400
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 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 4402
<211> 1548
<212> DNA
<213> B.fragilis

<400> 4402
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<211> 690
<212> DNA
<213> B.fragilis

<400> 4403
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<210> 4404

<211> 1530
 <212> DNA
 <213> B.fragilis

<400> 4404

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 <212> DNA
 <213> B.fragilis

<400> 4405

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 <212> DNA
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 <212> DNA
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 <211> 207
 <212> DNA
 <213> B.fragilis

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<210> 4409
 <211> 525
 <212> DNA
 <213> B.fragilis

<400> 4409
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525

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<212> DNA

<213> B.fragilis

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<210> 4411

<211> 1542

<212> DNA

<213> B.fragilis

<400> 4411

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<210> 4412

<211> 435

<212> DNA

<213> B.fragilis

<400> 4412

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<210> 4413

<211> 1302

<212> DNA

<213> B.fragilis

<400> 4413

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tgcagcaaa	atcagggcga	tcatggccgt	acggtttccc	ttgatttcgg	cctcgtaacc	1260
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<210> 4414

<211> 1509

<212> DNA

<213> B.fragilis

<400> 4414

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<210> 4415

<211> 1131

<212> DNA

<213> B.fragilis

<400> 4415

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<210> 4416

<211> 1209

<212> DNA

<213> B.fragilis

<400> 4416

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acagaataa						1209

<210> 4417

<211> 2088

<212> DNA

<213> B.fragilis

<400> 4417

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<210> 4418

<211> 1317

<212> DNA

<213> B.fragilis

<400> 4418

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<210> 4419

<211> 1248

<212> DNA

<213> B.fragilis

<400> 4419

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<210> 4420

<211> 1512

<212> DNA

<213> B.fragilis

<400> 4420

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<210> 4421

<211> 1443

<212> DNA

<213> B.fragilis

<400> 4421

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atgtatatta	tcaattatca	agatcaaaaa	ggttacacca	ttattagtgc	aactaaaaaa	360
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<210> 4422

<211> 846

<212> DNA

<213> B.fragilis

<400> 4422

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caattattgt	cgaagattcc	tcccgaaaaa	gaggtttccg	accagaacgt	tatcgaaacta	300
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<210> 4423

<211> 1278

<212> DNA

<213> B.fragilis

<400> 4423

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caagaacatt	tctatcaatc	actgctcgag	gaggtgccca	gcggcgtgct	tgcttgggac	420

gactcgggta	gaatcattat	tgccaacagt	gccgctttct	cgctgctgaa	atgcaaccgt	480
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<210> 4424

<211> 1305

<212> DNA

<213> B.fragilis

<400> 4424

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<210> 4425

<211> 1371

<212> DNA

<213> B.fragilis

<400> 4425

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<210> 4426

<211> 1035

<212> DNA

<213> B.fragilis

<400> 4426

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<210> 4427

<211> 1188

<212> DNA

<213> B.fragilis

<400> 4427

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<210> 4428

<211> 1173

<212> DNA

<213> B.fragilis

<400> 4428

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<210> 4429

<211> 1038

<212> DNA

<213> B.fragilis

<400> 4429

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1038

<210> 4430

<211> 1935

<212> DNA

<213> B.fragilis

<400> 4430

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<210> 4431

<211> 1977

<212> DNA

<213> B.fragilis

<400> 4431

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<210> 4432

<211> 597

<212> DNA

<213> B.fragilis

<400> 4432

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gaggtggatt	ctaaagtgcg	tcccggactc	aatatcggtc	tgggaggtga	tgtcatgctg	180
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tcagagaaca	aatcactctc	cgactatggt	accacagtca	taggcataaa	tgtgattcgc	420
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<210> 4433

<211> 744

<212> DNA

<213> B.fragilis

<400> 4433

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<210> 4434
 <211> 2373
 <212> DNA
 <213> B.fragilis

<400> 4434
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<210> 4435
 <211> 462
 <212> DNA
 <213> B.fragilis

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 cttcaggcac attattttcac tgaagatgaa atctattttc atgaaatagc tctttataag 180
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<210> 4436

<211> 909

<212> DNA

<213> B.fragilis

<400> 4436

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aacgtcttca	ccacggggct	ggaaggatcc	gcgggtggcg	ttaagaagga	tccgacgcgg	900
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<210> 4437

<211> 576

<212> DNA

<213> B.fragilis

<400> 4437

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<210> 4438

<211> 372

<212> DNA

<213> B.fragilis

<400> 4438

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<210> 4439

<211> 900
 <212> DNA
 <213> B.fragilis

<400> 4439
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 agaaaattaa aaagtgtaga ttcattagca ttgcagaaac agatccgtgc agaacaatct 180
 gaatatcctg cgttgagtct atataccta tggaaacaacc agtacgtaca tgcttacgga 240
 aaggatgcta ttattcccga ttcttatacg atcgatctga ccggcttcca tatgcctact 300
 ccgagtaccc gtattacatc tcctttcggg ccccggttga gaagaatgca caacggactt 360
 gatatcaaag tgaatattgg cgataccatt gtgcgagctt ttgacggaaa ggtacgtatt 420
 gtgaaatacg agcgtagagg atattggtaaa tatgtcgtta ttcgtcatga caatggtttg 480
 gaaactgtat atggccactt atctaaacag ttggtagagg aaaatcagtt agtgaaagcc 540
 ggggagccga tcgcttttgg tggaaacacc ggtcgttcga caggatctca cctccatttt 600
 gaaacacggt tcctgggtat tgccatcaat ccggcattga tgtttgactt cccgaaacag 660
 gatattgttg cagatacata tacgtttaga aaaacaagag gttacgaacg taacagagcc 720
 ggttctcagc atactaatat agcatcggac ggtgaaatca gatattacaa ggtgaagaaa 780
 ggcgacagtt tgtcccgaat tgctaaattg cgtggcggtt ccgtcagcac actttgtaag 840
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<210> 4440
 <211> 555
 <212> DNA
 <213> B.fragilis

<400> 4440
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 gagattgtag tcggagcgca tgacgtatct gtgctttgcg ataagaattt tgaaaattgt 180
 gacttctttg atgctgagct gctgttttta cccggaggta tgccgggagc tgccactttg 240
 gacaaacatg aagggttgcg taaattaatt cttagttttg cagagaaaaa caagcctatt 300
 gcagccattt gtgctgctcc gatggtactt gggaaactgg gactcctgaa aggacgcaga 360
 gttacttggt accccagttt cgaacaatat ctggatgggg cggactgcac taacgaaccg 420
 gttgtaagag atggtaatat tattaccggg atgggaccgg gagctgccat ggagtttgca 480
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 tgcgtaagac gtttaa

<210> 4441
 <211> 501
 <212> DNA
 <213> B.fragilis

<400> 4441
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 aaaggattgc gtttggcagg aatgaagatg gtgcagttga ctgatgaagt gttaagtgag 180
 cattattcac accttagttc gaaaccattc tttcagcgag tgaaagattc catgatgacg 240
 gctcccgtta tcgtttgttg ttttgaaggt gtggatgcta ttcaagccgt tcgtgcattg 300
 gcggggacca ccaacggacg tctggcagcg ccggggacca ttcgcggaga ttacagtatg 360
 agttttcaag aaaacattgt tcatacctct gattcgctg aaaccgcagc tgtcgaatta 420
 aacagattct ttaaaccgga agaaatattc gattacaagc aggctacttt tgattacctg 480
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<210> 4442
 <211> 933
 <212> DNA
 <213> B.fragilis

<400> 4442

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ctgttcaaat	tactcgagaa	acatggagct	gaaatctgcg	tatgcaggga	gtttcatcgt	180
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cgtgtaggca	ataaagggaat	ccctatttta	ggcatcaata	ccggacgatt	agggtttctg	360
gcagatgtat	ctccggaaga	aatggaagaa	acgattgaag	aggtttatca	gaaccattat	420
actggttgagg	aacgaagtgt	actccagtta	ctttgcgacg	ataaacattt	acaaaattcg	480
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cgtacagcaa	tcaacggggc	acatctcact	acttatcaag	cagacgggtt	gattattgct	600
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tccaaaacga	ttgcaatcac	tcctgtcgcc	ccacacagtt	taaatgtaag	gcctatagta	720
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gcaatagacg	gtagcagtg	aacctgtaaa	gagactactc	gtctcactat	ccgtagagca	840
gactatagca	ttaagggtgg	gaaacgcttt	aaccacatct	ttttcgatac	cttgcgtagc	900
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<210> 4443

<211> 774

<212> DNA

<213> B.fragilis

<400> 4443

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catcagcgag	acaccataa	gagattcttc	gctcttctgg	aatcccagaa	catccgtgta	120
aatcgcttca	gggcagactg	cggttcctgc	tcgaaggaaa	tcgtcagtga	gatagagaag	180
cattgcaaac	atctctacat	ccgtgccaac	cgatgcagtt	cgctctacaa	tgacatcttt	240
gctctgagag	gatggaagac	ggaggagatt	aacggcatcc	agttcgaact	caattccatt	300
ctcgttgaga	aatgggaagg	caagtgcctat	cgtcttgctc	tccagagaca	aagacgcaac	360
agtggcgacc	ttgacctgtg	ggaaggcgaa	tacacttacc	gttgatttct	gaccaacgat	420
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atctttgacg	acatgaacaa	cggattcggg	tggagcaggg	tccccaaagt	attcatggcg	540
gagaatactg	tctttcttct	gcttactgca	ttgatacaca	atctctacaa	gaccatcatg	600
agcaggcttg	acaccaaggc	ttttgggctc	aagaaaacga	gtcgcataaa	ggcttttgct	660
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<210> 4444

<211> 1335

<212> DNA

<213> B.fragilis

<400> 4444

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gagtataaaa	tacaagacta	ccttgatgct	ttcgggtatg	ggacatgggt	cccggctttt	180
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gtgctccttt	ggtttgctat	tcctttattg	atggttctcg	gtgtcgatat	attgggtggtg	1260
aagcgttttg	aaaagaggcg	gaaaagagct	gctgaaaaag	ctgtcgaaaa	ttcaaaatcc	1320
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<210> 4445

<211> 255

<212> DNA

<213> B.fragilis

<400> 4445

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acggacgcga	tgtgggtatc	gggttggggg	ggtagtgcac	tgcaccgacg	cttatgccgc	120
tgtctgatgt	gctgcattgg	actagtccag	gatacgatcc	gtattcgtcc	tgggtgggaat	180
acgatcgggtg	tgtcatgtga	aggcgtatct	atggacgcga	atggcatgag	agcgagggca	240
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<210> 4446

<211> 672

<212> DNA

<213> B.fragilis

<400> 4446

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gggagcgaac	ttcccaaaca	gtttcttccc	atcggtggta	aacctgtatt	gatgcgtacg	120
ctggaagctt	ttcaccgttt	cgatgaaaaa	atgcagatta	ttcttgtatt	acctcgggag	180
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cgctgcttcc	gggaagcagt	agtccgaaaa	gccgtcatal	ccgtcattga	tgtggtagaa	420
actgtgcgtc	atctcaccga	atcgggcagt	gaaaccgtaa	gccgtaatga	ctataaatta	480
gtgcagactc	cccagggtgt	cgatgcagat	ctgctgaaga	gagcttatga	acaggaattt	540
actccctttt	ttacagatga	tgcttcgggt	gtagaagcca	tgggtgttcc	tgtctacctg	600
gtggagggga	atcgtgaaaa	tataaaaata	actactcctt	ttgatttgaa	agtagcttca	660
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<210> 4447

<211> 804

<212> DNA

<213> B.fragilis

<400> 4447

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gaactgaatg	aagctttggc	taacgaaaag	cctaactgtg	atgtcattat	ctgtactccg	180
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gctgctcagt	tggcatctgt	attcgatctt	tccggcagaag	atttctctaa	gatcgttctg	540
gcttacgaac	cggtttgggc	tatcggtacc	ggtaaacacg	cttctcctgc	tcaggctcag	600
gaaatccatg	cgttcatccg	tccggctgtt	gctgagaaat	acggaaaaga	aatcgtgtac	660
aacacttcaa	tcctttatga	tggtagctgc	aaaccttcta	atgctaaaga	actgtttgct	720
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ggtatcattg acgcattcaa ttaa

804

<210> 4448

<211> 2124

<212> DNA

<213> B.fragilis

<400> 4448

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ttatccggtg	tgggcccgca	gaaagctgcg	gttttgaata	aagagctgga	gatttattca	120
ttgcatgacc	tgctctatta	tttcccttat	aaatatgtag	accggagtcg	catctattac	180
attcatgaaa	tagatggaaa	tatgccgtat	atacaattga	aaggggaagat	attaggattc	240
gaaacatttg	gtgaaggacg	tcagaggagg	ctggtggcgc	atttttcgga	tggtacggga	300
gtggttgacc	tggtatggtt	tcaaggtata	aagtatgtta	ccaataaata	taaacttcat	360
gaagaataca	ttgttttcgg	taagccaacg	gtgtttaacg	gaagaatcaa	tgtagcccat	420
cccgatatag	atagtcccg	cgatctgaaa	ttgtcgtcaa	tggggcttca	gccctattat	480
aatacgacgg	agaagatgaa	gcgcagcttt	cttaactccc	atgcgattga	aaaaatgatg	540
gcaaccgtta	tccgacagat	tcaggagcct	ttgtccgaaa	cactttccacc	taaactgatt	600
gccgatcatc	atttgatgtc	tttgacggat	gcattgcgga	atattcattt	tccttctaata	660
ccggaattgt	tgcgaaaagc	acaatatcgt	cttaagtttg	aagaactctt	ctacgtacaa	720
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<210> 4449

<211> 267

<212> DNA

<213> B.fragilis

<400> 4449

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gtggctctga	cactagtacg	agaggaccgt	gttgagctga	cctctggttt	accggttgtg	240
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<210> 4450

<211> 882

<212> DNA

<213> B.fragilis

<400> 4450

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ctcgtaagtt	ttgctatccc	gcatccggac	gaagaagccg	ggggagtacc	tgttatgatg	180
ggagatgtgg	atgctgctta	tggaaactat	gacccctcta	ccatggtgga	cgtggagggt	240
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cgtaaggcag	ctgaagatgc	ggctaagaag	gctcgtttta	atgctgtgga	cggagtaaac	840
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<210> 4451

<211> 636

<212> DNA

<213> B.fragilis

<400> 4451

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gattgtgaga	gtttcgggtg	tgacggaata	acggttcacc	cccgtccgga	tgaacgccat	180
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tttgatttcc	tgacagaagt	attggatgaa	tttaacgggg	cagggtatccg	tacatccgta	420
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gaattatata	ccgagcccta	tgctactgcc	tatccgaaag	atccggctgc	ggctgctgct	540
ccttttgttg	aagcggcaaa	agcggcacgt	acattgggga	tccgactgaa	tgccggtcat	600
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<210> 4452

<211> 450

<212> DNA

<213> B.fragilis

<400> 4452

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acctcaactg	ttgtgtcgcc	caatgcgatt	aaagtgttgt	tgccacaggg	gaaacagcaa	180
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cgcgaaatcg	ttaaagtgtc	gaacatcgct	aatgagaatc	atttttaaata	ggtgttggct	420
acacgccccg	cggaaacaaa	gaagaaatga				450

<210> 4453

<211> 270

<212> DNA

<213> B.fragilis

<400> 4453

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cgcacgatga	agaacccgca	tggagaaggg	aacgggatgc	accaatgcag	aaggacatat	180
gaaggatggt	caatacttaa	cggaccatca	cggagcgtcg	tgcacatga	tcgatcgatg	240
cgaagacgga	ggcgggacgt	cgcagctga				270

<210> 4454

<211> 738

<212> DNA

<213> B.fragilis

<400> 4454

aaactgtctt	cgctcatgaa	tgcaatgcta	ctattagccc	aagtggctac	caatctggct	60
gactccgttg	catcggccaa	tcctgtattg	actcctgtat	ctgcaccggc	agaaatgaat	120
atgcttgata	tggctatcaa	gggtggatgg	attatgattg	tactggccgt	actgtctggt	180
gtctgtttct	acattctgtt	cgaacgtaac	tatatgattc	ggaaagccgg	taaagaagat	240
ccgatgttta	tggagaagat	taaagattat	atccatagtg	gggagataaa	atcggccatt	300
aattactgtc	gtacgataaa	tactccttca	gcccgcatga	ttgagaaagg	tatcagccgt	360
ttgggacgtc	cggtaaataa	tgtgcaggtt	gctattgaaa	atgtgggaaa	tatagaggtg	420
gccaagttag	agaaaggact	gacggtaatg	gctaccattt	ccggtgggtg	accgatgctt	480
ggcttcctgg	gtacggtaac	cggtatgggt	cgggcatttt	acgaaatggc	gaatgccgga	540
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gtgggtgggt	tgattgtggg	tattattgct	atgtttgctt	acaactacct	ggtgatgttg	660
gtagaccgag	tagtcaataa	gatggaatcc	agaactatgg	agtttatgga	tttgcttaat	720
gaacctgcac	aaaaataa					738

<210> 4455

<211> 558

<212> DNA

<213> B.fragilis

<400> 4455

aatccgtttt	tgattatggt	agaagaaatt	cttgaattca	acaaaaagtt	cgttgagaac	60
aggggatacg	aaaagtatat	cactaacaag	tatcctgata	agaaaatcgc	catcctttcc	120
tgtatggata	cccgcctgac	agaactgttg	cccgcgcgtt	tggggattca	caacggagac	180
gtaaagatta	taaagaatgc	cgggtgccgtc	atttcccac	ctttcggcag	tgtcatccgt	240
agtctgctgg	tggctatcat	cgagttggga	gtagaagaag	tgatgggtcat	tgcccattct	300
gattgcgggtg	cttgccacat	gaacagcgac	gaaatgatag	ctcacatgaa	aaagcgggga	360
atcaagtccg	aaacaatcga	catgatacgc	tactgcgggg	tcgattttta	ttcgtggctg	420
ggcggattcg	acgatccggt	gaagtccgtc	aggggcacgg	ttcgttccat	agagaacccat	480
ccgcttattc	cgaagatgt	ccgggtgcat	ggttttatca	tcgattcact	gaccggcgag	540
ttgacgagag	tggataaa					558

<210> 4456

<211> 207

<212> DNA

<213> B.fragilis

<400> 4456

ggtaaatacat	cggattgttt	tccgttttct	ttcttactgt	gtgccatcta	tttatgcaaa	60
cgtttttcatt	ggaaaattct	ccgggatgga	gctcaaccga	taaggagcac	ttttcgatgc	120
aatcaggtga	acgtgacgtc	cggaaaagga	gatgccgtca	tagcttcggc	tacgcagcac	180
cgtaacttcg	gctacgcagc	accgtaa				207

<210> 4457

<211> 225

<212> DNA

<213> B.fragilis

<220>
 <221> unsure
 <222> (91)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4457

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cgttttcttc	cgctacccgt	agcaggaaaa	ngccatgcgt	tcgcgttccg	gacggatcac	120
aataaatcaa	taaaattcat	acgcgcgctg	cctgttatgc	tcgctattat	caaatccggt	180
tcggtctatg	gaggagattc	cacaccagac	aggtcgctcc	ggtag		225

<210> 4458

<211> 1095

<212> DNA

<213> B.fragilis

<400> 4458

tggataccac	cttcattccc	ggcacactca	aaccacaata	aatacaacaa	agtaaagatg	60
aaaaacacat	tcctgttaac	attcgcactg	atactcctgg	caggcagccc	cctgaaagcg	120
caggagaaag	aagaggctgc	tacactgaat	aaagtgggtca	acacactgaa	agagcgaatc	180
actctggccg	gatacgcgca	gttgggatat	acctatgacg	atgcagcaaa	aaaaatgaat	240
acgttcgaca	tcaaacgaat	cattttcatg	gctcacggaa	agatcacgga	ccgctggacc	300
tgtgatttta	tgtacgactt	ttacaacggc	ggcatgctgc	tcgaagttaa	caccgattac	360
cggattctac	ccgggctgaa	agtgcgtatc	ggcgaattta	aggttcctta	taccatcgaa	420
aatgaattgt	cgcccactac	cgtagaactg	atcaactgct	attctcagtc	agtctgctat	480
ctggcagggg	tgagcggcag	tgatgtcgcc	tgtggcatga	catcgggacg	cgacatcggg	540
gccatggttc	atggaggcct	gctgaatgat	ctgctatgct	acaaactagc	cataatgaat	600
ggacaaggac	ttaacatcaa	ggataaaaac	aatcaaaaag	atatcatcgg	caacctgatg	660
gtgaatcccc	tgaaatggct	gtcgggtgggt	ggttcgttta	tcaaagggac	cggacacgcc	720
attgccgact	ccgaaataac	cggcatccgg	gcaggagaaa	actataccaa	aaatcgctgg	780
agcataggag	gcgtcatcac	gacaacaccg	ttcagcctcc	gttccgaata	tctggccgga	840
aaggatggag	gcgtgaagag	tgatggtttt	tatgccaccg	gatgctaccg	gatgctacgc	900
aatttcgacc	ttgtggcttc	gtatgactat	ttcaatgcaa	acaaagccgt	cagtaggaaa	960
cagaccaatt	atatagccgg	actgcaatat	tggttctatc	ccaagtgcag	gctgcaagca	1020
caatacactt	tctgcgaccg	gaataaaaggc	aaagacagca	atctgtttca	ggcgcaggta	1080
caggtaaagat	tctga					1095

<210> 4459

<211> 1425

<212> DNA

<213> B.fragilis

<400> 4459

caagcccaac	cctctttcat	caatcacacc	atctctgcat	acaacagtgt	atttaccttc	60
gggtatcgcc	agtttggcag	gaacagaacg	ggcattaagt	gccacgataa	tgttgtccca	120
agtatctccg	ttagcgcggt	ctttcaagcg	gaaagccacc	agattaccaa	catctaccgg	180
gaggaattcc	aggtgcttac	gtaccatctc	ggcatctccc	atacggaaaag	cgggatgggc	240
tttacgaata	ctgatcaaac	gcttataata	ggcgaacaca	tcttcgtgag	ttgtctttcg	300
gttccaatca	atggcattaa	tagaatcggg	actctcaaaa	ctattatgca	cccctttctt	360
gtcacgcatac	acctcttctc	cggcatagat	gaacggaata	ccttgcgaaag	tcagcaactgc	420
cgtctgcgcc	agtttgtcaa	gtcgtacgag	ttgttcgggt	gtgatgccgg	ggataactcga	480
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gaacgctccc	ttatgattat	cattaaaagg	accacgcaac	gcatcacgca	tttcatcgga	720
aaaggcggca	ataccggcca	ttttacaagt	attgaccttc	attgccagcg	aatcaccggg	780
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actgaccgcc	ttacggattt	cattcatcgt	ctcgatgtcg	tgaatgccca	tcagggtcgaa	900
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acgcatcata	ggccgggttg	ttgccgtctc	gttaccacaa	gccgaaccat	tagccaacga	1020
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ggtgttgtat	gtatgattgt	ataccacatc	gagcactacc	cgtataccgg	ctttgtgcag	1140
tgctgttacc	atctgcttaa	actcgcggat	gcggacagcc	ggatcgtaag	gatcggtagc	1200
atacgaacca	tcgggtacat	tgtaattctg	cggatcatat	ccccagttgt	atttattttc	1260
atccagcttg	gtttcgtcta	ccgaagcata	atcataagac	ggaagcaa	ggacgtgtgt	1320
tactcccagc	togatcagat	gatcaattcc	ggtcagcaat	ttggcagagt	tcatcgtacc	1380
atgttctgtc	aatgccaaaa	attttccctt	atgctgaatc	cctga		1425

<210> 4460

<211> 1386

<212> DNA

<213> B.fragilis

<400> 4460

acgatgcagt	tcctctcttt	tagtttctctg	gccctgttta	ccctctgttt	cttctctctac	60
tatgcagtca	aaggccgtgc	ccgcaacctc	atactactgg	taaccagttg	tattttcatc	120
ggatggtact	atctgccttt	cctgttgacg	gcagtagtgg	tagcactgtt	caccttcttt	180
tgggcacaat	ggatggaaag	cagggcaaaa	gccggaaaaa	agaccaaac	cgtctatatc	240
gcaggaatca	tcgccctgat	cggcggatgg	ctccttcttc	atggcacggg	catagatgat	300
atcatctttc	cacttgggat	gtcattttac	acatttcaag	ccatcagtta	tctgacagac	360
gtgtactggc	aagagcaacg	cagcgaaaaga	aactgggtgg	atttcctgat	ctatatgctt	420
ttcttcatga	agtttctctc	cggccctatc	gaacgggggtg	gagacctgtt	gccacaattg	480
aaagatcccc	gcccgttcac	ctactcaaac	gcggtgaccg	gactgaaata	tattttactc	540
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cattcgattc	atgacctctc	gggtgtacaa	ctgctaata	cttgccctact	ctaccctatc	660
gaactgtatg	ccgatttttc	gggttatac	gatattgcta	tcggagggggc	ctatatgttc	720
ggcatcaagt	tgtctcctaa	cttcaaccgc	cggtttgacg	cacgctcgac	tgccgacttc	780
tggcgccgtt	ggcacatgtc	actctccttc	tgggtacgcg	attatctcta	tgtaccgcta	840
accgccggta	cccgtaaactg	gggacagtgg	ggaatctact	tcagcctcct	catcaccttt	900
ctcgcattgg	gtttgtggca	tggggccgga	ttgactttcg	ccatatacgg	cctgattcag	960
ggtgtcctta	tctgctggga	aatgaaaaca	gctgctttcc	gctataatct	gccccaatat	1020
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aacctgatgg	aaacacttga	acgccaaccc	gcattggttac	ggtggagtgt	ctactatctg	1320
ttggtattcg	ctctgctgat	gttaggcaaa	tttgacacgg	aaactttcat	ctatttaca	1380
ttttaa						1386

<210> 4461

<211> 207

<212> DNA

<213> B.fragilis

<400> 4461

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gaaaaccaat	ggatatgttc	ccgacggctc	tattctctac	ctcggacgct	ggaacggaat	180
gggagcaatg	atttatttca	catctga				207

<210> 4462

<211> 1149

<212> DNA

<213> B.fragilis

<400> 4462

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cactgctcga	agcaatcgaa	ggaaaagttc	ttccgggtat	tgccgctatc	caggaataag	120

actgaagtga	atcactataa	gacagaaaaag	gcaacccccgc	tccgagttgc	ctttttttaa	180
agccggaaat	ggggagagag	cctccttttc	agtatcctgt	tccttttctt	tctatcagcc	240
tgcacaggaa	agaaagagaa	gcattccgct	ttgccggaac	tgcaaaactct	gactttcggg	300
ctgatgcctt	ctttcgatgg	actgccttct	ctggttgctg	tccgtcaggg	tatttatgac	360
tgcgtggata	tcaaaaatcga	tttcattact	tatgcttcgg	caactgaccg	cgatgccgct	420
tttttatcgg	ggaaactgga	tggatatgctc	accgactacc	cgggtgcaac	tctggtgcag	480
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gccaatacct	ttgtagaata	tgccacagac	gaagtaatga	aacgggcctg	cctgcacccc	660
ggagaagtga	acaaacctga	aataaacaat	atccccctga	ggctgatgat	gttggaggac	720
ggacagatct	ccgcctcttt	cttaccggga	ccggcatcgg	caattgccct	gaacgatggg	780
catacagcat	tactgaacac	aagacaaatg	ggactgcgtt	gcaccggaat	tgttttctca	840
gaaaaagcca	tcacggaaaa	agacgaagag	atcaggcggt	ttatcaccgg	ctacaatctc	900
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ttcggactgc	aggaaaaggc	ggccatgcag	atagacttgc	cggactatcg	gcctgctacc	1020
cgtccgtctt	accacgacat	agaaaaaatc	attgcctggc	tgaagagtaa	aggggcaatc	1080
cccgactatt	atccgggaga	aaattttagtg	gataccacct	tcattcccgg	cacactcaaa	1140
ccacaataa						1149

<210> 4463

<211> 1368

<212> DNA

<213> B.fragilis

<400> 4463

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gataaatatg	gaatcagtg	agagagagtg	atagcgtggg	tacgtgaaag	ccaaatcacc	120
acttccgttg	tgggcagcgt	ggtgctgatt	gatgacggga	gcgtgtgcga	attggtagag	180
aaagaaaaac	ggttggcgca	cctgaaaacc	aattacgagc	aactttgcgc	gaagtttgag	240
cagcgcacat	aggcggaaact	gcgtgcagac	gaagatgccg	gactcaagat	gcgtcttctg	300
gatgatttcc	tccccgttct	gcaccgacta	ctctgcgtga	tgattgacaa	gctgaacacc	360
gaagatcgaa	aactgttcaa	cagtgccttc	acagccgccc	ctctgtatcg	gatagctcgg	420
gaaatgggat	ttgagtctgt	aaaagactac	ctcatagcgt	acaggaaggt	gaccaggagg	480
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aatcggatgt	gcagtgaact	gcgcgacaag	gagatatatt	acattgaacg	gtgcgaacgg	660
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aaatgggaaa	agtgcccaaa	cgtgggggag	gccggaaaaca	ccggagagga	tgaagcctg	780
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cgcggggaac	tgattacagag	ggtcgccccg	ctggagaggg	aaatgtataa	atacaatagc	900
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gccaaagacg	aagtggagat	gataatagaa	ggtatagcga	gcttagacga	aatgggggca	1260
tcgctggaca	gatataagaa	agaaaccagc	gagatgatcg	aaaaatataa	ggcgaacgag	1320
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<210> 4464

<211> 1623

<212> DNA

<213> B.fragilis

<400> 4464

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ggagtacgct	cttgtgtgaa	cgacctcaat	acggttccac	tggacaaaga	cgaattgggt	120
tccgacgttg	ttttcgggaa	cgagcccttg	gcttatgagc	agagtcttgc	taagatttat	180
gcaggatatg	ccatcgggtg	taacagcggg	ggtgattccg	atcaggatgt	ggtaggcac	240

gatggcggta	gccaggettc	ctttctccgt	gtattgtgga	atatgcagga	tttgccttcg	300
gacattgcac	actgtgcatg	gaatgacccc	ggtatccctg	agttcaacca	tatctcctgg	360
ggtgcatcca	gtccgtggat	caagggttca	tactaccgcc	tgttctatca	aatcaatgta	420
gccaacgctt	atctgctgta	gactaccgaa	gataaactgg	atgcccgcgg	ttgtgacgca	480
tactgaaag	cctcgatcaa	gacatggcgt	gccgaagccc	gttttctgcg	tgcattgagc	540
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ggaagtattc	cgccgaagca	gatcatggct	gccgatctgt	tcaactggat	cgagaaagaa	660
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gaaatgattt	tcccggtaag	ctatgagggc	gaccagacga	tgacctgggg	tggtagtacc	960
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gtatggcctt	ggaaggggtg	tacagccaaa	ggtaaggctg	ttgagaactt	ctacaacgtg	1560
ttcccgatcc	cgtcagacga	tatcggttct	aacaccaatc	tcaagcagaa	tgaaggatac	1620
taa						1623

<210> 4465

<211> 402

<212> DNA

<213> B.fragilis

<400> 4465

cgtttgcgaa	cgtttatctg	ttttgggtgct	gcaaataata	tgtattattc	tgaaataaatt	60
gctatgtttg	cggaaataat	caacttaaa	ataaaaaata	tgctgatata	caataccact	120
tttcaggtgg	acgacgaagt	tcatgataat	tttttgatct	ggatcaaaga	gagttatatt	180
cctgaagtag	agaaacacgg	cgctctccgt	gctccgcgca	tctgtcgtgt	gttgagtcac	240
cgtgacgaag	gtacttccta	ttcgctccaa	tgggaggtgg	acgattctgg	tgtgctgcac	300
cgctggcatc	aggatcaggg	tgcgcggctc	aaccaagagc	tggatgaagat	atttaaggat	360
aaagtagtcg	gatttcccac	attgatggag	gtattggagt	ga		402

<210> 4466

<211> 453

<212> DNA

<213> B.fragilis

<400> 4466

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acctggatgg	cattccgccca	ggccgttcag	cgggtactca	aacgtcacia	cgtggatatg	120
accttcgaga	tgctgcaagt	aatgaactgc	ctgtggaaca	aacaaggcat	cagccagcaa	180
tccctggctg	agaaaacagc	aaaggacaag	gcttgccctga	ccaatctgat	taataatctg	240
gaaaagaaaa	actgggtgat	acggaaaagaa	ggccccctccg	accgccgaaa	ccgcctgatt	300
ttcctgacgc	cccaaggcga	agaacttgcc	ctcacccgtga	aaccctgat	caacgatatc	360
tatgccc aaa	ccggagcaga	gatggaggca	agccggataa	cggatgcat	cgaagacctg	420
aagagactgc	atgaagtgc	caatgagatc	taa			453

<210> 4467

<211> 1080

<212> DNA

<213> B.fragilis

<400> 4467

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aggaacatct	ttctcaacac	agtatgcatc	ctgctggcat	tggcaggat	ttcatggaca	120
gtaaactact	tctggaaata	cgcccgctac	gagataacca	atgatgccgt	agtggatcaa	180
tacatcgctc	cgctaaacat	ccggataccg	ggctatatca	aagaagtacg	ttttaccgaa	240
caccagtatg	ttcatgccgg	cgacacgtta	ctgatactgg	acgaccggga	ataccggatc	300
cggctgaaag	acgcggaagc	ggccttgatg	gatgccttgg	gatcaaagga	agtgttaaac	360
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<210> 4468

<211> 1296

<212> DNA

<213> B.fragilis

<400> 4468

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<210> 4469

<211> 195

<212> DNA

<213> B.fragilis

<400> 4469

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<210> 4470
 <211> 201
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

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<210> 4472
 <211> 2865
 <212> DNA
 <213> B.fragilis

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<210> 4473

<211> 1209

<212> DNA

<213> B.fragilis

<400> 4473

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<210> 4474

<211> 1014

<212> DNA

<213> B.fragilis

<400> 4474

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<210> 4475

<211> 1194

<212> DNA

<213> B.fragilis

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<210> 4476

<211> 1266

<212> DNA

<213> B.fragilis

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<210> 4477

<211> 252

<212> DNA

<213> B.fragilis

<400> 4477

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<211> 690

<212> DNA

<213> B.fragilis

<400> 4478

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<210> 4479

<211> 210

<212> DNA

<213> B.fragilis

<400> 4479

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<210> 4480

<211> 2169

<212> DNA

<213> B.fragilis

<400> 4480

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<210> 4481

<211> 1032

<212> DNA

<213> B.fragilis

<400> 4481

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<210> 4482

<211> 2034

<212> DNA

<213> B.fragilis

<400> 4482

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<210> 4483

<211> 1359

<212> DNA

<213> B.fragilis

<400> 4483

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<210> 4484

<211> 396

<212> DNA

<213> B.fragilis

<400> 4484

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ggctttctgg	tagattttggg	tacgcaaaaag	atgaacaaat	gggataaacac	aattatcaat	360
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<210> 4485

<211> 504

<212> DNA

<213> B.fragilis

<400> 4485

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<210> 4486

<211> 1278

<212> DNA

<213> B.fragilis

<400> 4486

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tatgactata	aaacggtgat	cagactgatt	gatgaagaaa	gtgcatcacc	acagttactc	180

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<210> 4487

<211> 1332

<212> DNA

<213> B.fragilis

<400> 4487

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<210> 4488

<211> 1050

<212> DNA

<213> B.fragilis

<400> 4488

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ctcagcaaga	aaggagccat	caatgacttg	atggcagatt	tccgcaatgt	ggctgccgaa	180

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<210> 4489

<211> 294

<212> DNA

<213> B.fragilis

<400> 4489

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<210> 4490

<211> 183

<212> DNA

<213> B.fragilis

<400> 4490

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gaaatattta	ctatttttat	taattgggtg	tggagagtat	cggactcgaa	ccgatcacct	180
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<210> 4491

<211> 2202

<212> DNA

<213> B.fragilis

<400> 4491

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<210> 4492

<211> 1527

<212> DNA

<213> B.fragilis

<400> 4492

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caactcgggtg	aaataacagc	ttctatcacc	cattcgctat	cagaaataaa	agatgaaaaa	180
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<210> 4493

<211> 522

<212> DNA
<213> B.fragilis

<400> 4493

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<210> 4494

<211> 219

<212> DNA

<213> B.fragilis

<400> 4494

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gagagctatc	aggagcggga	tgacgaatac	atatactctg	atcttcgggg	atgcgaacca	180
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<210> 4495

<211> 183

<212> DNA

<213> B.fragilis

<400> 4495

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ctaaaatgga	tcgtttttgg	ggagcagttt	cctttgcgga	gtggcttttag	ggcaaaaaaa	180
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<210> 4496

<211> 858

<212> DNA

<213> B.fragilis

<400> 4496

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<210> 4497

<211> 741
 <212> DNA
 <213> B.fragilis

<400> 4497
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 cgcgatatatg ctacggtaca gaatccgttt gtcattacta agtacaaggg actggatccg 660
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<210> 4498
 <211> 294
 <212> DNA
 <213> B.fragilis

<400> 4498
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<210> 4499
 <211> 1623
 <212> DNA
 <213> B.fragilis

<400> 4499
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<210> 4500

<211> 933

<212> DNA

<213> B.fragilis

<400> 4500

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<210> 4501

<211> 528

<212> DNA

<213> B.fragilis

<400> 4501

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<210> 4502

<211> 192

<212> DNA

<213> B.fragilis

<400> 4502

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gatggtgaca	aaatagtaca	tgtgctgcc	ttggtagtga	taggccagtt	gagcgggtgat	180
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<210> 4503

<211> 1875

<212> DNA
 <213> B.fragilis

<400> 4503

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gatatcaaca	aacaggagat	tctgttgctg	atgcgcgatga	acaaacaggc	aaaagccgcc	1740
gacaagctga	aagagtatct	ggacctgctg	gccgaatata	aacagcaaaa	cgacatgaac	1800
accaggaat	ccgaatggat	cggagaagaa	ctggactggg	ctagcaaaat	gctttcaaaa	1860
atcagtctgc	tatag					1875

<210> 4504
 <211> 186
 <212> DNA
 <213> B.fragilis

<400> 4504

tgcactttct	tcataatca	gtctgatcac	cgttttatag	tcatagtttg	ccattgcttc	60
ttgaacggag	gcggtgttct	gggctcgag	cattacgtg	aagccagat	agaggaggag	120
tatccaatgt	ttcatgaggg	gatagattct	attgtttctg	actttctaac	ggtattcctt	180
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<210> 4505
 <211> 1863
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (1100), (1146)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4505

cgagctaata	tcatgaaaaa	attattgtta	ctcttaggtt	cattcctact	gtcattaacc	60
acttatgcag	ccatgaacat	atccaaaatc	gatccgccct	tctgggttcac	cggtatgaac	120
aatccggaac	tccagttaat	ggtatacggg	gaaggcatcg	gccaggcatc	cgtatcagta	180
aattatcccg	gtgtatcgct	cagcagcgct	gtgaaactgg	aaagcaacaa	ttacctgctt	240
gtctacctac	atctcgataa	agaagtaaag	ccgggcaaga	tgcccatcac	atttacggtc	300
ggaaaaga	aattggtgaa	agagtacgaa	ttgaaagcac	gcagcaaagc	cggagtcgat	360
cacaaagggt	ttgacgcac	ggatgcatta	tatctgctga	tgccggaccg	tttcgccaat	420
ggcaatccgg	ataacgaccg	gatagaaggc	atggccgaat	ataaagtgga	ccgcaacgac	480
ccgaacgcac	gtcacggagg	cgacctggcc	ggatcgaac	aaaatctgga	ctattttacc	540
gacttgggag	tgaccgcact	ctggttcacc	ccgggtactcg	aaaataatat	gaaaggcggc	600
tcatatcacg	gatatgcaac	aaccgattat	tacaaggtag	accacggtt	cggcactaac	660
gaggaatata	gctcactgat	agcgaagcc	cacaaccggg	gcattaaggt	cgtgatggac	720
atgatcttca	atcattgcgg	agtagaacat	ccctggatca	aggacatgcc	ttcaaaggac	780
tggttcaacc	atgcggactt	caagaacaac	tttgtgcaaa	cttcctacaa	actgactcca	840
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acacgggtggg	cgaacacctg	gttaccgaaa	ccgcctatac	agcctggtgg	cagaaaagaa	1140
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ggatggacgg	acgataaaga	gaatgccctg	actcccgagg	gacgtaccgg	attgcagaat	1560
gaaagctata	acttctaccg	caacctgctg	aactggcgta	agggcaacga	tgtgatcgcc	1620
aaaggcagca	tgaacagtt	catgggtgcag	cacggcgat	atgcttatgc	acgccaatat	1680
aaagggaaaa	cgggtattcgt	cctgttgaa	ggtacggata	aagagggtgaa	acttccctcg	1740
aaatactatg	ccgaagtgc	gaaagacaag	actcaaggaa	aagacgtcat	tagcggaaaa	1800
gtaacggcac	tcaatgaaga	actgacaatg	gcaccccgcc	aatcgatgg	tatagagctt	1860
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<210> 4506

<211> 267

<212> DNA

<213> B.fragilis

<400> 4506

aaaacgaata	ttaaaatgaa	aaaaggctct	catcctgaat	cataccgtcc	ggtagtattc	60
aaagatatgt	caaacgggtga	tatgtttttg	tctaaatcaa	ctgtagctac	aaaagagacc	120
atcgaattcg	aagggtgaaac	ttatccgtta	ctgaaaatcg	aaatctctaa	cacttctcac	180
ccgttctata	caggtaaatc	tacattggta	gatacagccg	gacgtgttga	caagttcatg	240
agccgctacg	gtaaccgtaa	gaaataa				267

<210> 4507

<211> 573

<212> DNA

<213> B.fragilis

<400> 4507

attatctgta	taatgaaatt	cataaggaag	tttccgggtga	ccgatgcgga	tagtctggaa	60
agtcccaaaa	agtttgaggg	cttctttctt	gattattatc	cccgggtcaa	aggattcatt	120
aatggcttgt	tacaggatgc	tgaagaggcg	gaagatcttt	cgcaggatat	atttatgtca	180
ttgtggcaga	accggggaaa	tctgaagcag	atagacaact	tggatgcata	cctgttccgt	240
atagcccgga	atgcggtttt	ccggtacatc	gagcgctctt	tgttatttaa	aaattatcaa	300
tcaggcgagt	tatcggatga	taactccgat	ctgtatgaaa	tagaatcgga	actgaacgcg	360
aaagaattag	aactgattat	agccatcgct	gttgaagaaa	tgccctctca	aagaagaaaag	420
atttatcaga	tgagccgcga	acaggggctt	agtaatgaaa	atatagctcg	tgaactgaac	480

attagcaagc gtactgttga gaatcatctg acccaggctt tggctgatat acgtaagata 540
 ttgttttggg tcatcatggc tactttcgt a taa 573

<210> 4508

<211> 852

<212> DNA

<213> B.fragilis

<400> 4508

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gatgcagttt	cggagaagat	cgttttccaa	gatgatttca	accaggcaga	tagtattcct	180
gatagaaata	aatggagttt	gtgtaagaag	ggaagcccgg	cctggagcaa	atatttatcc	240
gaaagctatg	atcaggctta	tgtacacgat	ggaaaattag	tgttggttgc	cgaaaaagtg	300
aacggagtat	ataagacagg	aggagtgcaa	tcattgggta	aagcgggaatt	tcaatatggt	360
aagatagaga	tatgcgcccg	tttcaccaag	acggcaaaag	gcggatggcc	tgccatctgg	420
atgatgcctg	ccaaacccgt	ttacagtggg	tggcctgctt	gcggtgaaat	agatattatg	480
gaacagttga	atcatgatgg	cattgtatat	cagacaattc	acagtcatta	taaaaatgat	540
ctgggattca	ctaagcctgt	tccgacaaaa	acagtgtctt	acaataaagg	gcaattcaat	600
atatttggta	tccagtggtg	tcccgaagct	cttactttta	aggtgaatgg	agctgctact	660
ttagttttatc	ctaacttgca	cttggctgat	gagagtgtca	aaaagcagtg	gccgttcgac	720
acctcttttt	atttgatttt	aaattatgcc	ttgggtgggc	ccggaacttg	gcccggtact	780
ataacggata	gtgaattgcc	tgcaaagatg	gagattgact	gggtaaaagt	gagtcagcct	840
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<210> 4509

<211> 1563

<212> DNA

<213> B.fragilis

<400> 4509

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gcccgcgagc	gtattgcaca	gttgcttgac	gaaggtagtt	tccaagaact	ggatatgttt	180
gttcaacaca	gatgtaccaa	tttcggacaa	gagaaaaaac	atttcctcgg	cgacggtgtg	240
gtaaccgggt	atggaacgat	agaaggtaga	ttagtatatg	ttttcgcaca	agatttcaca	300
gtattcgggtg	gttcaactgtc	ggaaaccatg	gcacaaaaga	tctgtaaagt	aatggatatg	360
gccatgaaga	tgggtgcccc	tgttatcggg	atcaacgact	cgggtggcgc	acgtattcag	420
gaaggcatca	acgcctctgtc	cgggttatgct	gaaatcttcc	agcgcaacat	catggcttcg	480
ggtgtcatcc	cacagatttc	aggtattttc	ggtccgtgtg	cgggcgggtg	ggtttactct	540
cccgccttga	cggacttcac	gctgatgacg	gaaggtagat	cttacctgtt	cctcaccgga	600
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ctggcgatta	ttcgcaagct	tctcagcttt	attccgcaaa	acaacctgga	agaagctcca	780
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gacagcccga	acaaaccgta	cgatatgtac	gaagtgatcg	gcgccatcat	cgataacgga	900
gaattccttg	aagtacagaa	agactatgcg	aaaaatctta	ttatcggttt	tgcccgtatg	960
aacggacaat	cggtaggtgt	ggttgccaat	cagcctaaat	acctcgccgg	agtactcgac	1020
agcaatgctt	cacgcaaagg	tgcacgcttc	gttcgcttct	gcgacgcatt	caacattccg	1080
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actgttaccc	tgcgtaaatc	ttacgggtgg	tgcacatcg	taatgagttg	caagcaactc	1260
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gcagtagcgg	tattgtatgc	caaagaagcc	aaagatcagg	aaaacctgc	tcaattcctg	1380
gcagacaagg	aagccgagta	cactaaactg	ttcgccaacc	cgtacaatgc	agccaaatc	1440
ggttacatcg	acgatgttat	cgaaccgaga	aacactcggt	tccgcgtgat	ccgcgcctg	1500
caacagctgc	agacaaaaaa	attaaccaac	cctgctaaaa	agcacggtaa	tattccattg	1560
taa						1563

<210> 4510
 <211> 441
 <212> DNA
 <213> B.fragilis

<400> 4510
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 ttggacaagc ccgtaaaagc cgctccgaaa ccggtgaccc gtccggcagc cgctccgaaa 180
 acggaaacag gtgctccggt agtaaccaa caaccgacag cttccaaaaa agacgggtgtg 240
 aaatctccgc ttccggggcgt tatcctcgac ataaaagtga aagaagggga taccgtgaag 300
 agaggccaga cgatcatcat ctttgaggct atgaagatgg aaaacaacat caatgccaat 360
 aaagacggaa aagtagcaga aattaaagtt aataaaggag attctgtact tgaaggtaca 420
 gacctcgtaa tcattgaata a 441

<210> 4511
 <211> 1059
 <212> DNA
 <213> B.fragilis

<400> 4511
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 tttgatcctt atagggtatt acacccctac aaacgattcg acgactctcc catgctactc 180
 aacgaagccc atgtgggatg gcagaattat ctgcagaatc gcgattcgat agcctataac 240
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 ctggataaga acgaccatgc cgtacgcttc tatgacaacg gagaaagcct gggcggcgctc 360
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 ctggataaaa aatcactgga caaaaacgct cctttatcgg gcaacaatca tctgttttcg 480
 gccgaagcag ccggcatcag ccaattggga ttccagttga gattcctgca ggagttcctt 540
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 atgaaagggg ttataaatcc gggagatccc gtcagggagc cttacacgaa caattttatc 660
 aatcccagag aaaaagagat cgcgcaagat ggcgaaatat actggagccg tcatgaaaaa 720
 gaattcaaga agcgaacgaa tgccgggtatg gaagaacttc ctgttatatt tgccagccag 780
 attcaggtac ttcgctccat caaaaaaatc tgcgataagc accacacgaa cctgaagttc 840
 gtcacgggtc cggattacta tcagaaaaaa gccagccggg aagacataaa aatattgaag 900
 gctatactgg gtgattccgc tgtctgggat ttcacgggaa tcaacgaata cacagccgac 960
 atacatcatt attacgaacc cggccattat cgtccgctgc tgggagcacg cttactgaaa 1020
 gccatttatc aggatcaaga cacctgccac aggcaataa 1059

<210> 4512
 <211> 1617
 <212> DNA
 <213> B.fragilis

<400> 4512
 aaacaacgaa ttaagattat gaaaaaata tatttctata cactgttggtt aggacttctg 60
 gccttttacgg cttgcgaaga tgagaagtcg cccgtcatgg agttgcagaa agcctctgct 120
 tttgagcctt tctctcaaag cgactttact ttcaacgatg aaaatgctgc ggctgagttt 180
 cccgagatca agtggacggc agcagactat ggagtgaagg cagtgggtgaa ttatgacgtt 240
 aactgacga atgatgcgaa tgcgaaaact gtcttatttg gtgaaactgg aactaccagc 300
 ctgaagttta ccaatggaca gatgaacact atgatggcta aggtgggggc ttatccggga 360
 cagacttata actttacgat tacgctgact tctaaagcgt atgacatgac tgctgatcca 420
 gcttcgaact cgattacttt taaggcgact ctttttgatc cgaatgcggt tgactggaag 480
 ttcgcttatg tggccgtggg ctatccggac tgggactata cgaatgctta cctgttgggc 540
 gatcccgatg gtgacggggt ataccaggga tatgccact tcgatgcgga tggcgtttcg 600
 tatgctatta tagacggaag tgatcttacc aagattctgg caaaggatca gacggctgct 660
 aaaaaaggat tctacgggat caaagtagat gccgaaggta aggtggaaca gaccgaaccc 720
 cttgtatggg gagtgggtggg agacgctact tccgggtggtt gggataagga cacacaaatg 780

gactatgacg	ccaccacccg	cttatggacg	gttactactt	cattgcttga	caaagagttt	840
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tccgaacttg	aaggcgaact	ggtggcaggg	cctaataatt	ttaaggtggt	gaaagccagt	960
ccatacgtga	tcactatgaa	tctgacaaat	gccggtaaat	attcttatag	catggtagaa	1020
actaccattg	aattgtcgag	tgcggaaatg	gcattgccgg	gaagctatca	gggatgggac	1080
gctactaaaag	atgattgtta	caaagtgcaa	tctgctgccc	gcgactttat	ctataccgga	1140
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agcgacggcg	ataatatcaa	gattgaaaca	gccggatact	atcgggtagg	tgccgatatg	1320
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ggtggatggg	acaaaggaac	tgtgatgaat	tatgatccgg	caactaaact	ctggtcggta	1440
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ctgggtggca	gcctgggggc	actgactcag	gatgggtgcta	atatgaaagt	gacagccgga	1560
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<210> 4513

<211> 633

<212> DNA

<213> B.fragilis

<400> 4513

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aacttagatc	gttataaaat	cgtattggcc	tctaattctc	cgcgctcgcaa	agaactgatg	120
acgggcttgg	gtgtcgatta	tgtagtaaaa	actttgccgg	atgtggacga	atcttatccc	180
gatacgttgc	aaggtgaaga	gattcctctt	ttcatagccc	gtgagaaggc	agccgcctat	240
cagtcgatga	tccgaccgga	agagcttttg	atcacagccg	ataccattgt	ctggcatgaa	300
ggcaaagcgc	tccgcaaacc	tgttggaagg	caggatgcca	tagagatggt	gcgagacctc	360
tccggtaaat	cgcaccaagt	gattaccggg	gtgtgtctca	ctacccgaga	atggcaaaaa	420
tgtttcgctg	ccgtgacgga	tgtccgtttt	gcgattcttg	atgaagatga	aatcgcttat	480
tatgtcgatc	actatcagcc	catggacaaa	gccggttcgt	atgggtgtgca	ggagtggatc	540
ggttttgtcg	gagtagaatc	catatccggc	agctacttca	atgtaatggg	acttcccatt	600
cagaaattat	acaggaatt	gaaacaacta	tag			633

<210> 4514

<211> 603

<212> DNA

<213> B.fragilis

<400> 4514

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attattcttg	gcattgatcc	cggtactacg	atcatgggat	acggagtgtc	ccgtgtttgc	120
gggacaagac	ccgagatgat	cgctatgggg	atcatcgatt	tgcggaagtt	cggcaatcat	180
tacctcaaac	ttcgtcatat	ccacgaacgg	gtgcttagta	ttatcgaaag	ttacttgccc	240
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gtggcggata	tgttgcaacg	catgctgcat	tttgccaaag	aggatatgcc	tgtttttatg	480
gatgctaccg	acggattggc	agctgcttat	tgccatttcc	tgcagatggg	gcgtccggta	540
atggagaaaag	ggtatagcgg	ttggaaagat	tttatagcca	aaaatcccga	aagagtaaag	600
tag						603

<210> 4515

<211> 357

<212> DNA

<213> B.fragilis

<400> 4515

aagttttattg	ttagtgaatt	aaaaattcta	tgcaaaagta	agaataatcc	tttgaataga	60
gaaaccctcg	ggcggaaata	tccgtttgag	gagcgttaatt	caattctatt	tcaaattatt	120

tcccatcctt	taagagctgt	ttgtaatgtc	tacgtagcaa	ataaagggtt	tttattgttt	180
cctcatatat	ataatggtag	gcaaatgata	gctgtaacca	tccaaccaca	ctctgccacc	240
atatgtacgc	aggggtgcac	ccttatat	accatcctgc	tgaacacagg	aatcgcgcat	300
gaaaacttca	ttgtgatcat	atttcaatcc	ttttgtgtgt	tgaagcagag	tggatga	357

<210> 4516

<211> 927

<212> DNA

<213> B.fragilis

<400> 4516

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aacgaccaga	actatcagga	tgactacgga	ctgcacaatg	cgtggataga	gatattcaac	180
acctctttcg	cttctgtaaa	tctggaaggt	tgctttctga	cgaacgataa	aaacaatccg	240
accaaataatc	ctattcccaa	aggcgacgtg	ctgactctga	tcaagccgcg	ccaacatgct	300
ttgttctggg	cagacggaat	gcctaaccgg	ggtacgttcc	acgtgaactt	tacgcttgac	360
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ggtatggcca	tcattcgccat	gtcggtcgta	ttcataggtt	tggtactctt	gtatctttca	660
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ggtatcaccg	acaagacgga	agcgaaggaa	aagaacctgg	gtagccacac	aggtgaagaa	780
accgcccga	tcgccatggc	tttgcataaa	tacctgaatg	acgctcacga	cgttgaagac	840
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acactgcgtc	agactccgaa	aagataa				927

<210> 4517

<211> 315

<212> DNA

<213> B.fragilis

<400> 4517

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catggacgtc	ctgacgagaa	cgatagattc	cgggttcccg	aagtacgggc	aaaatcaatg	180
ccttgctcaa	aaaaaatctc	actatcagaa	gaaagaatca	gagaatcggg	ttctttctct	240
tccgacgagc	aaccgaaacc	aatcagcgga	agcaggagga	acagaaacgg	aaaagttaaa	300
tatttcatag	attaa					315

<210> 4518

<211> 1092

<212> DNA

<213> B.fragilis

<400> 4518

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<210> 4519

<211> 1062

<212> DNA

<213> B.fragilis

<400> 4519

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<210> 4520

<211> 585

<212> DNA

<213> B.fragilis

<400> 4520

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<210> 4521

<211> 252

<212> DNA

<213> B.fragilis

<400> 4521

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gcaattttat	tagtatgcgc	agctatgttg	gcttcgtgta	acggcctggg	tggtggaagt	180

aaagacatga aggccaaaaa attgattctt tttttgatgg agtttgaccc acaagaacgc 240
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<210> 4522

<211> 753

<212> DNA

<213> B.fragilis

<400> 4522

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<210> 4523

<211> 246

<212> DNA

<213> B.fragilis

<400> 4523

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cttcgagatt	gctatgcac	gctcgacgaa	ctctgtgaag	atatgaatat	cagcaaggac	180
atactgatcg	gaaaactgga	atcgatcggg	ttcgaataca	atgccgaaca	aaataagttc	240
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<210> 4524

<211> 2352

<212> DNA

<213> B.fragilis

<400> 4524

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<211> 762

<212> DNA

<213> B.fragilis

<400> 4525

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<210> 4526

<211> 201

<212> DNA

<213> B.fragilis

<400> 4526

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gtgcccatata	aatcgttaaa	aagtgggtgg	ggggaaaaaa	aaaaactcct	tgtggatgaa	180
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<210> 4527

<211> 2169

<212> DNA

<213> B.fragilis

<400> 4527

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<210> 4528

<211> 222

<212> DNA

<213> B.fragilis

<400> 4528

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tcttccgagc	aggaagcaaa	tgcaacggaa	atcaatgcca	cagacaagat	accttttgat	180
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<211> 864

<212> DNA

<213> B.fragilis

<400> 4529

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aattcagatg	tagatatgca	agcattgctg	aacgacatag	agctggatat	tcaggagctt	180

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<210> 4530

<211> 660

<212> DNA

<213> B.fragilis

<400> 4530

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<210> 4531

<211> 2844

<212> DNA

<213> B.fragilis

<400> 4531

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<210> 4532

<211> 1614

<212> DNA

<213> B.fragilis

<400> 4532

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1614

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<211> 720

<212> DNA

<213> B.fragilis

<400> 4533

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<210> 4534

<211> 1524

<212> DNA

<213> B.fragilis

<400> 4534

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<211> 1257

<212> DNA

<213> B.fragilis

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<210> 4536

<211> 1185

<212> DNA

<213> B.fragilis

<400> 4536

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<210> 4537

<211> 588

<212> DNA

<213> B.fragilis

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<210> 4538

<211> 1632

<212> DNA

<213> B.fragilis

<400> 4538

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<210> 4539

<211> 1020

<212> DNA

<213> B.fragilis

<400> 4539

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<211> 216

<212> DNA

<213> B.fragilis

<400> 4540

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<211> 570

<212> DNA

<213> B.fragilis

<400> 4542

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<211> 762

<212> DNA

<213> B.fragilis

<400> 4543

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<211> 4083

<212> DNA

<213> B.fragilis

<400> 4544

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<211> 1296

<212> DNA

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<211> 567

<212> DNA

<213> B.fragilis

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<211> 1503

<212> DNA

<213> B.fragilis

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<210> 4550

<211> 906

<212> DNA

<213> B.fragilis

<400> 4550

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gagtcaatgc	taaaagaaca	cgaccatact	tttttttgagt	tggctctacat	cttatcgggt	180
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gaatttatct	tacagcatgc	caaccaccaa	cctggctgta	ttttacgaaa	tcgaacagac	420
aaactactcg	taaaacctat	gattgaagcc	atcatcaggg	aatacgtcaa	tagaaactta	480
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acaatgcaac	agtacatact	gaattataaa	ctgaaactgg	tagaaaacag	attattgcat	780
agtgaatatga	gaatcagtg	gattgtagca	gaattagggt	tcaccgatga	aagccattta	840
aataaaactat	ttaaaaaata	cagagggttc	agccccacaa	atttcagaaa	gaataatgca	900
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<210> 4551

<211> 1398

<212> DNA

<213> B.fragilis

<400> 4551

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<210> 4552

<211> 252

<212> DNA

<213> B.fragilis

<400> 4552

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ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 4553

<211> 252

<212> DNA

<213> B.fragilis

<400> 4553

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ctgagaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
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<210> 4554

<211> 678

<212> DNA

<213> B.fragilis

<400> 4554

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ctaacaaatg	atgcagattt	taattcatgg	tacgaacaag	ctaaagataa	aatagataat	180
gtgttcactg	aaaagtctat	gcctaaacct	catttgaagc	acataaaatc	agcacaacta	240
tttgacaagc	aatttaattt	cacagataat	aaattagata	ttacaggatt	tgaagtatat	300

gccataagt	gtattctttc	attattaaaa	aatcggtcca	aagattttta	tatcggaaaa	360
tcatttactc	cttatggggc	ttgtcctcca	cagacattcg	cctttaaaagc	agaaaaagga	420
gtttatctac	acaatcaaaa	atatgtaaca	ataataggaa	aagatcttaa	ttttattcta	480
acgacgaaca	agcagattga	tttttggcat	aaaaatgcaa	aaatagatga	tcaagggtatc	540
ctagttttcag	taagaaatca	aatatattct	tttatctttc	ctttgtcagc	agacattttg	600
ccagatgata	ttgacgctat	atttcattta	atacagactg	aaggacattt	tgttttctat	660
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<210> 4555

<211> 1050

<212> DNA

<213> B.fragilis

<400> 4555

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attttagatt	gcactacctc	cccaaagaaa	acaatacaaa	aagaggaggc	cacaggaaaa	180
tgggtaaaat	atgaaaataa	tcctgtcttg	ggtggtggcg	atttaggtac	ggtattcgat	240
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gactgctgga	tgctttggta	caatgggcgg	aatgaacatt	tggaaacagat	tgggtttggct	1020
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<210> 4556

<211> 216

<212> DNA

<213> B.fragilis

<400> 4556

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atctcttcgg	gagaaaacat	ttatcatgca	cttgagaatt	atttgtccgg	catgtattat	180
ctttgtgaac	ccactaatgc	attatatcta	acatga			216

<210> 4557

<211> 1173

<212> DNA

<213> B.fragilis

<400> 4557

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agttgcggta	tgccacttcg	ttttgatatg	gaagaatggc	tgggaaactaa	tttggatggt	120
tctaaaagcg	atacattctg	ttactactgt	ctgaaagacg	ggaaatatac	agttgacgtg	180
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catacagttt	attctcccga	agaattgaaa	atgatattgg	agaaaagact	gccgacactc	300
aatcggtgga	aacaaaaaca	agatacgaag	aatgttcata	accaagctat	tcaaagtata	360
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tgcggaatgt	cagaatatca	ttttagaagg	gtattcaaat	ttattgtcgg	tgaaaaatata	480
ggaaattaca	tacaacgact	tagattggaa	tatgctgcac	acttattgac	ttcaaccgaa	540

tatacattat	cccggatagc	ggaactggca	ggttatcaaa	acaaatacag	tattgcaaaa	600
gcattcaaga	agcatttttg	agtttcaaca	tccttattta	aagaaaagatt	tacacctcga	660
aaacgaaatg	cacatacatc	gctaactccc	agaataataa	tgattaataa	aatgtttggt	720
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aaactgttgt	attatgcaag	gttcaatagg	atagacaaaa	aacacacgaa	ctttgtcagt	840
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gctatattcc	ggcatatagg	tagttatgat	ttcttatgtg	atztatatag	aataatttat	1020
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ataaattctc	catgtgatac	agatgtaccg	gaattgataa	ctgacatata	tatacctgtc	1140
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<210> 4558

<211> 357

<212> DNA

<213> B.fragilis

<400> 4558

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tgccagtcga	ttaagaaact	cggtcagttt	gcccggtctt	cgctttatca	cgtcctcatg	300
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<210> 4559

<211> 339

<212> DNA

<213> B.fragilis

<400> 4559

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ataaaagtcc	cactttgggt	gcaggaaaaa	gagaaatcga	caggcaaaga	cctaaattca	180
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ctggaaccgg	agggaaagat	tatctccgca	cgtgccatag	tgaaccgtta	tcagggaag	300
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<210> 4560

<211> 474

<212> DNA

<213> B.fragilis

<400> 4560

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gaaatagaaa	cgttgtttaa	agaacaaaat	gctgtaatgg	cagatgttcc	ttttgtggaa	180
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aaagtccctg	gtggaaaggg	gaacataaga	gcgattacca	ttccgggcag	aaaaatagta	300
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tggtatgcgg	ctaaagggtta	taaactcttca	ggggcatcga	tagaatatta	ttatagtaag	420
ccgggaactt	cagaagaaga	actggttact	aagggtgaaa	tgccagtttt	gtag	474

<210> 4561

<211> 1977

<212> DNA

<213> B.fragilis

<400> 4561

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caaaccaatg	cccccatctg	gggtgaagcg	cagcctatga	aaactgtaaa	agtaaccacc	180
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aaagctgaga	tagacggaga	caaaattata	gtcagtgcac	ctgaagcggg	accttatccg	1860
gttgctgtgc	gatatgcttg	ggccaataat	cgggtctgca	atttgtataa	tggagcagga	1920
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<210> 4562

<211> 1545

<212> DNA

<213> B.fragilis

<400> 4562

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acaacacttc	ttattgcatt	aaatagatta	ggtgacaatc	tagcattcag	cagaaatctt	180
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gaaataataa	atccttttaa	tgatatatta	cagactgaaa	aatttcgcaa	tcttaaataa	480
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<210> 4563

<211> 213

<212> DNA

<213> B.fragilis

<400> 4563

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tacttaaaag	cgttggatat	taaattgctg	acaatcttat	taaagcaact	gatatccgta	180
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<210> 4564

<211> 249

<212> DNA

<213> B.fragilis

<400> 4564

tattctgata	tgaaaaatth	attagaacag	agattttttc	ggctattgtc	ggaatgctcg	60
cagcgcaaag	tttctgtttt	cgagttggca	gaagctattg	aggaattggc	tatgcatgta	120
gccaatthttg	gtatcaacga	acaggattac	agcgtttttac	tccgatattt	ttcctttggg	180
ttacatcgte	ttaaatcgta	ccgtatgcgg	tttgagcaag	aaaaaaatgc	cctatttgca	240
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<210> 4565

<211> 225

<212> DNA

<213> B.fragilis

<400> 4565

acaatgaaaa	ttgcaaagaa	gttgttattg	gtgattttct	atataatata	tcttctttct	60
tttgtaaaaa	gaagaaaaga	aattatcttt	gtcctcagta	ttctccatga	gcgaactacc	120
gcaaaagctc	atagcaaatt	aatgagaaaa	ttcatggaat	atgctgaaat	aaaagaatat	180
aaagctthta	atattagcgt	ggtaacttta	caaggagaat	tctag		225

<210> 4566

<211> 663

<212> DNA

<213> B.fragilis

<400> 4566

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tgcttggccg	gtgaatggta	tgattgccat	gctccggttt	ttctagaact	aaaaggaaaa	120
actcaccgtt	tggtgatgag	atacaattca	ctgtcttatg	aacaaaaaga	agaaaaatat	180
gcgattctga	aagaaatgtt	cggtagtatc	ggaacagagg	tttccgtagg	acattctttt	240
ctctgcgatt	atggatgtaa	tattcatatt	ggtgataatg	ttacggtaaa	tatgggctgt	300
gtgtttgtcg	attgcaataa	gattacagtt	ggtaataatg	tactgattgc	tcctaattgc	360
cagattttata	cggcaacgca	tcccattgat	ttgaatgaac	gggttaacacc	tggtgaggca	420
coggagggag	ttcgatatgt	cogtcataca	tttgcccttc	cggtcactgt	tgaagatggt	480
tgctggatcg	gtggtggagt	tattatattg	cccgggggtta	ctattggtaa	gggaagtgtt	540
attgggtgccg	gaagtgttgt	taccacaaat	gttccctgca	acagtctggc	tggtggaaac	600
ccatgtaggg	tgattcgtca	aatcaataaa	tctgaaaatt	atgatccggc	tggtagcttt	660

tga

663

<210> 4567

<211> 513

<212> DNA

<213> B.fragilis

<400> 4567

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agggtcgaac	aggataaaat	cgactatatc	attgaatgtg	cccgtttagc	tccttctgca	120
gttaattatc	agccttggca	tttcatgggt	gtggtcagtg	aagaacaaaa	acagaattta	180
cggcaatggt	ataatagaga	atggttcgca	cgggcaccgg	tatacattgt	tgtttgtgcc	240
gataaatcga	tagcatgggt	acgtaaattc	gataacaaaa	atcatgcgga	tatcgatgct	300
gctatcgcta	cagagcatat	ctgttttagc	gcagccgaaa	tagggctggg	aagttgttgg	360
gtgtgcaact	ttgatccgga	attgttttaa	gctaatttca	ggctgtcgtc	cgaaagatat	420
ccggtagcta	ttgtatcatt	gggatatatc	caagagcaac	ctgatcattt	tactatccga	480
aaggacaagg	atgaaattgt	tactttctta	taa			513

<210> 4568

<211> 783

<212> DNA

<213> B.fragilis

<400> 4568

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gccaacgaac	aggagaccat	ttcgggaagt	atcaaaggaa	gtatcatttt	tcgctatgct	180
gaagcactgc	tgatttatgc	agaggcaaga	gccgaactgg	gtaacatcac	acagaatgat	240
ttagacatta	ccattaataa	actgcgtgat	agggtaggta	tgccacatct	cacactttcc	300
gtaggttata	ccgatccgaa	gggagacttt	acggcagcaa	gaggttatga	gggggtaccg	360
gtttccaatc	tgctacagga	gattcgacgt	gaacgccgta	tagaattagc	atgtgaagggt	420
taccgccacg	atgacttaaa	gcgttggcgt	gccaccact	tatggaatca	cgatagaata	480
cagggggcaa	acgctgctca	gtttgaaaac	ctggattgggt	tagtgaagta	tttccaaaac	540
gacttccaca	ttcccgcgc	aatcaataag	gcagatttca	tggaaaagggt	ggggcattgg	600
agtcccgaac	gtaatcagga	caactactgg	gtggacagtg	aaggttattt	tgaaccttat	660
caacgccaca	ttccggacgg	acattttcat	ttcgacccaa	caaaagcgta	tcttcagccg	720
attcctactg	aacaattgggt	gttgaatcct	gacttgaaac	aaaatcccgg	ctgggaaaaa	780
tag						783

<210> 4569

<211> 525

<212> DNA

<213> B.fragilis

<400> 4569

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tacatcgtct	taaatcgtac	cgtatgcggt	ttgagcaaga	aaaaaatgcc	ctatttgcat	120
ttaattgatg	aagcgatagg	acttctaacc	accgaaatac	gccttatcga	atggcgtatc	180
aaatacacgg	aacaactaca	acaacgtgct	aataagcaat	tcctttcccc	tctttttctc	240
gctgacaaaa	caacccttat	caacattatg	gaaatggtaa	gcggtctggt	cctctccaaa	300
agcatcatat	atcagaacgg	aaagcctgcc	tattgggtgg	acttatccaa	aggggttgaa	360
tggctgttca	atatcaagat	aggcgattgt	taccaaagc	atgaggacgt	gataaagcga	420
aagccgggca	aactgaccga	gtttcttaat	ggactggcag	actttatccg	aaaggaacat	480
gacaaaaagg	atatacacca	gttccccggt	tacctcacgc	agtag		525

<210> 4570

<211> 1965

<212> DNA

<213> B.fragilis

<400> 4570

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gtgaatctct	cagataaaat	ctactacgat	gtcattttgcc	ggaatgagac	attgttaaag	180
cagtgtcacc	ttgcaatgga	aatcgggtgac	caggaattgg	gaacgaatcc	taaaatgact	240
aaagtaagcc	ataagaatat	agacgagtct	ttaaagcctg	ttattccatt	gaaattttcg	300
tctgtaagta	atcgggtacaa	ccaacttctt	ctagacttca	aaggagggtta	ttccgtagag	360
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aatgtgaaga	atgagaccct	ccaagtgaac	ttccctgata	attattttgct	acacatgcaa	480
cagtcgggaa	gttttaaaac	ggcttatgaa	gaagaatata	cccattttgta	tagcaaagaa	540
tggaaatcat	ctgcctcaat	ggctttattg	ccaattctga	ttgatactca	aaaaggaagt	600
aagatattaa	tcagtgaaac	atcactaacc	gattatccgg	ctgttttttt	gaaaagtaat	660
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aattttccctt	ggcgctat	tgtcattagt	acagaagata	gccaaactcat	tgagaatacg	840
atgtcttata	gattggccga	aaagaacata	ttggaagata	cttcctggat	taagcccggga	900
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cctgcggtag	atgtgcatga	actcattcgt	tatggcaaag	aaaaaatgt	aggcattgtg	1140
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gctttgaaag	ctaaggctgg	ggaatatgtg	attgtggcaa	aacgtaaagg	agataaagtg	1740
tatatcgggtg	gcatgactaa	caaccgacag	caagagagaa	cctttgaatt	ggattttgac	1800
ttcctgaaag	aaggacaatc	ttatcggatg	acttcttttg	aggatggggt	taatgctaac	1860
cgacaagcta	tggattacag	aaaaaaagaa	tatactctta	aaaaaggaga	taaaaataata	1920
gtgcgtctgg	cacgtaacgg	aggatttgcc	tctgtcattg	agtga		1965

<210> 4571

<211> 357

<212> DNA

<213> B.fragilis

<400> 4571

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cttctcgggt	tatgggtggc	agaggcagtt	gctgtcgatc	cgattctatc	ctcagagggtg	180
actcgtatac	cgaagcccta	tcaagagcaa	acactcaccg	atgagcgaaa	ctatgagaga	240
ttgatgacag	gagagaagcg	ggagatcttc	ttttccgcgt	cccgaagccg	gaaaaagaag	300
atgttttaaac	gggaacggct	ttatacccg	tacgaacaga	taatgaagaa	tgaataa	357

<210> 4572

<211> 297

<212> DNA

<213> B.fragilis

<400> 4572

gaaaggagg	catccgggca	accagatgct	ctcttttttt	gttatatttt	atatgcgaac	60
ccttcaaagt	ttaatagtat	gaaacatctc	cggatcatct	gtataccgac	attgactttt	120
gcccggcttc	tgatgtttac	tccctctatc	ttgcaggcgc	aggataagcc	tgtttttccc	180
attgattcac	ttattacagt	aggatatgct	tccggaaata	agaaaaatat	ttccggttca	240

gtagaaaaaa ttacggagtt gggcatgaat aaagatcaga taaccgatcc gctgtag

297

<210> 4573

<211> 2367

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (2344)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4573

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atagtaaaag	atcagatggg	ggaacctgtg	atcggtgcca	atgttctcgt	gaaaggaact	180
tctaattggag	ttattacaga	catagatggt	aagtttgcat	tgtcggctgc	caaaaatgat	240
atcttgatta	tcagttttgt	cggttttatg	agtcaggaaa	tcccggtaac	gggaaaagat	300
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ggcgcgaaatg	cccggaaaca	agacttgtca	gcggctgtgg	gtgtattgag	taacacggat	420
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gttacggtac	aatctaattg	cgggtgacct	acatccactc	cttctattgt	tattcgtgga	540
caagggtctc	aaaatgggtga	caacgtactt	tgggtagttg	acggcgcttc	gggtgctcct	600
attgcttcaa	tgagtgatat	tgaatctatt	gtcgtattga	aagatgccgc	gtctgctgct	660
atztatgggtg	cgcaatcagg	tgcggggcgg	gttatcctgg	ttactaccaa	aaaagctaaa	720
gcgggtattc	ctactcttag	ctatgaaggt	acttacggca	ttcgccaggc	tacaaatttg	780
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gtattgatta	atacttataa	taagaattat	gcaattcgtt	ataatggcaa	gtttgatttg	1080
aataagtggg	tatctattag	tgaggatttg	gtatggaaga	atactgagaa	tcgttcaaaa	1140
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atagctaaat	atggaagcaa	tttcgccggg	gctcatgggt	atgcggtcaa	tccggtacgt	1320
ttactgagag	ctgaaaaccg	ttttaataga	accagcgatg	tgtggagcac	taccagtttg	1380
cagatagcca	atataatata	gggcttgaag	tttaccagcc	gttttactta	taatctgaaa	1440
accaataatt	ataagaactt	ccgtcccatt	caagatgaac	cgggtaaacc	taataattca	1500
aatagcctgg	atgtaaccaa	ctaccgtaca	gatgcttgga	aaacggagaa	tactctaact	1560
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tcttggcgctc	gtgactatgc	cggtcgttta	ccgaaagaga	ataactttgg	tgattttccc	1860
gcagctacct	tagcttgga	gatttcta	gaaaagttct	ttaaaaagag	tgattttcatc	1920
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acatggggaga	cttctgaaca	gtgggattta	ggttttagatg	ttgaactgtt	caaaaatcgt	2160
ttggcattgt	cttttgattta	ctttgataaa	cgtaccttta	acttgattca	gaagcaaaca	2220
atgattttggc	caagttctat	cggattggac	acgttggtga	ttaataaagg	tgagattcgt	2280
aatcgtggta	ttgaaaacaa	gctaactgga	accgatcggg	ttaataagat	ttttcctact	2340
tcgnggccgg	gaatttttca	tatctga				2367

<210> 4574

<211> 1794

<212> DNA

<213> B.fragilis

<400> 4574

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gattatgtaa	atccgttcgt	cggaaacgacg	aattacggaa	caacgaaccc	cggagctatc	180
tgtccgcagg	gaatgatgtc	ggttgttcct	tttaaatgtga	tgggggacaa	atccgttggt	240
aataaaatag	ataaagacag	ccagtgggtgg	tctacacctt	atgaacatac	caataacctat	300
ttcaccggat	tctcacatgt	taatctgagt	ggagtaggat	gtccggagct	gggctoctta	360
cttttgatgc	ccacaaccgg	aaaattgaac	gttgattatt	tacaatacgg	aagtgcctat	420
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caggccgtat	ttcccattta	ttttgtgatg	cgtattaaca	aaactcctcg	tgcacgtggc	720
tattggaaga	agatgcgtcc	gatgacggtg	gaagcgcagt	gggataatac	ttccggtaaa	780
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cgtgccgaag	cgctgccc	gtggcagaat	gatctttcac	ggattcttgt	agaagggtgg	1020
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gtacaagcag	cctatgaagc	tatgtataag	tctgtacga	cacctggcaa	agataattta	1440
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gataattctg	tatcgtatgc	actggaatat	tatatagccg	attatgcgct	ctcacgtttt	1560
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tctattctcc	attcgatccg	atggaaggag	ccaattttgc	tccgagtcct	ggttttcatg	1740
aggggaactc	ctggaattat	acattttatg	ttccccatga	tattgcaggc	ttga	1794

<210> 4575

<211> 567

<212> DNA

<213> B.fragilis

<400> 4575

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gcatttgcct	tgcttggtgc	ggaatatcag	actttcggtt	ttcgcttggc	tttccgtctg	120
ttgttgcgtg	aagaagaagc	ccgggatatg	gtgcaggaga	cttttttacg	tgtctggctt	180
tcattggata	agtaccggcc	ggaattccgt	ttctccacct	ggctttacag	ggtagcatgt	240
aatatctgtt	atgatecgtc	gcgggctttg	cagcattctc	cggccggtgc	gctctctgat	300
attacatttg	ccgaactgcc	tgtctgttcc	gatgataata	ttgaagccac	gttagtcaac	360
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tttacatctg	tccagatcaa	ggccaatctc	tatcttgac	gaaaaagtat	ccgtaagaag	540
ttgaacgaaa	taaataaaga	aagatga				567

<210> 4576

<211> 1080

<212> DNA

<213> B.fragilis

<400> 4576

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gtgtcttgca	ccacttatta	tcagggtgaag	acccggattc	atcctgatgg	ttcggcccat	120
aggggaagtat	atgcttttgc	cgattctgca	ttcatggccg	gagatccgat	gaaaaaccct	180
tttatgtttt	ctttggattc	cggttgggtg	gtgacacgtt	tcgattctgt	ccgtactcac	240

aattatTTTTg	gagaagaggg	aaagattaac	gtatgtgccg	gcagggaaga	gccttctgtc	300
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caggagacac	tgaccaaaca	ttttcgttgg	ttctacacct	attataccta	taccggcatc	420
tatccggaat	tggcagataa	aggccccgta	cctctaaaga	actacctgaa	tgaatcggaa	480
cagaagcTTT	ggttccaggg	tgacgcacaca	gcctatcgcg	gaatgaacgg	attggagatg	540
aaagaattgc	tcgatcgggt	ggaaaagaaa	ttttacgact	ggtacaaccg	aagtctttat	600
gaattaagtt	tcgaagtatt	ccggcctttt	atcgctgaga	tagatcgggg	gaagtatatg	660
tcccgtctgg	atgaagttaa	ggattcattg	tatctcggct	atcaacctaa	agatgatgat	720
ccggatcctg	atccggaact	catttgccaa	ttgctcgata	cgcattatca	taccgactgt	780
ttttctctgc	tttataagga	aaagcaacag	gaagtagata	aacgctttga	cgaagagaca	840
cgtccgattg	aattgttcgg	agccgtgatt	caatatgaac	ttaaaatgcc	cggacaaatg	900
atctcagcca	atacaacttt	cagagatcgc	gaatatctgg	tttgaaagt	ggatgcttac	960
cgtcttttgg	cgggtgaata	ttccttgacg	gcccgatcac	gggtacccaa	tgtctgggcc	1020
tttatcctta	ccggtgtact	gattcttttg	ggaataggct	tttgataaaa	aaagcgatga	1080

<210> 4577

<211> 2520

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (204)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4577

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<210> 4578

<211> 879

<212> DNA

<213> B.fragilis

<400> 4578

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<210> 4579

<211> 1704

<212> DNA

<213> B.fragilis

<400> 4579

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<210> 4580

<211> 207

<212> DNA

<213> B.fragilis

<400> 4580

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<210> 4581

<211> 1188

<212> DNA

<213> B.fragilis

<400> 4581

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<210> 4582

<211> 1635

<212> DNA

<213> B.fragilis

<400> 4582

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<210> 4583

<211> 252

<212> DNA

<213> B.fragilis

<400> 4583

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<210> 4584

<211> 2526

<212> DNA

<213> B.fragilis

<400> 4584

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<211> 1044

<212> DNA

<213> B.fragilis

<400> 4585

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<210> 4586

<211> 258

<212> DNA

<213> B.fragilis

<400> 4586

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gttattgctt	ggatactttt	ctttttccgc	at ttggaaat	acgaaatgac	aattgttaaa	180
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<210> 4587

<211> 1062

<212> DNA

<213> B.fragilis

<400> 4587

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ttgattttcga	tgatgacgga	agaggaagcg	aaccagggtca	cccacctgac	cctgaccgga	180
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<210> 4588

<211> 879

<212> DNA

<213> B.fragilis

<400> 4588

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<210> 4589

<211> 786

<212> DNA

<213> B.fragilis

<400> 4589

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<210> 4590

<211> 768

<212> DNA

<213> B.fragilis

<400> 4590

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<210> 4591

<211> 894

<212> DNA

<213> B.fragilis

<400> 4591

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<210> 4592

<211> 1722

<212> DNA

<213> B.fragilis

<400> 4592

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<210> 4593

<211> 183

<212> DNA

<213> B.fragilis

<400> 4593

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<210> 4594

<211> 243

<212> DNA

<213> B.fragilis

<400> 4594

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<211> 915

<212> DNA

<213> B.fragilis

<400> 4595

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<210> 4596

<211> 249

<212> DNA

<213> B.fragilis

<400> 4596

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aaagggtttca	ttcataagat	tacaagcaga	agcgagttgt	ctttttcaga	tgtagttcgc	240
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<211> 264

<212> DNA

<213> B.fragilis

<400> 4597

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<211> 1644

<212> DNA

<213> B.fragilis

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<210> 4599

<211> 627

<212> DNA

<213> B.fragilis

<400> 4599

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<210> 4600

<211> 231

<212> DNA

<213> B.fragilis

<400> 4600

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agtgcgaat	cgattcctat	tttcagttat	gtccatatca	aacgttattt	atctaagtga	180
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<210> 4601

<211> 207

<212> DNA

<213> B.fragilis

<400> 4601

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<210> 4602
 <211> 1296
 <212> DNA
 <213> B.fragilis

<400> 4602
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 <213> B.fragilis

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<211> 1473

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<211> 1005

<212> DNA

<213> B.fragilis

<400> 4607

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<211> 1386
 <212> DNA
 <213> B.fragilis

<400> 4608

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<210> 4609
 <211> 612
 <212> DNA
 <213> B.fragilis

<400> 4609

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<210> 4610
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<400> 4610

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<210> 4611

<211> 918

<212> DNA

<213> B.fragilis

<400> 4611

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<210> 4612

<211> 2568

<212> DNA

<213> B.fragilis

<400> 4612

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<211> 252

<212> DNA

<213> B.fragilis

<400> 4613

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<210> 4614

<211> 858

<212> DNA

<213> B.fragilis

<400> 4614

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<210> 4615

<211> 585
 <212> DNA
 <213> B.fragilis

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<210> 4616
 <211> 486
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 <213> B.fragilis

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<210> 4617
 <211> 198
 <212> DNA
 <213> B.fragilis

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 acgggtaag atagaattaa tgatacgcaa ttgatataat atggccttgag attagttggt 180
 agattatttg ctttgtaa 198

<210> 4618
 <211> 249
 <212> DNA
 <213> B.fragilis

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<210> 4619
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 <212> DNA
 <213> B.fragilis

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<212> DNA
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<212> DNA
<213> B.fragilis

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aaaatagaag taaaaaacia gtctttttat taa 213

<210> 4622
<211> 2550
<212> DNA
<213> B.fragilis

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<211> 2889

<212> DNA

<213> B. fragilis

<400> 4623

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<211> 978

<212> DNA

<213> B.fragilis

<400> 4624

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<210> 4625

<211> 963

<212> DNA

<213> B.fragilis

<400> 4625

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<210> 4626

<211> 525

<212> DNA

<213> B.fragilis

<400> 4626

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<210> 4627

<211> 1269

<212> DNA

<213> B.fragilis

<400> 4627

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<211> 642

<212> DNA

<213> B.fragilis

<400> 4628

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<210> 4629

<211> 210

<212> DNA

<213> B.fragilis

<400> 4629

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<210> 4630

<211> 3648

<212> DNA

<213> B.fragilis

<400> 4630

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<210> 4631

<211> 2187

<212> DNA

<213> B.fragilis

<400> 4631

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<210> 4632

<211> 2040

<212> DNA

<213> B.fragilis

<400> 4632

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<210> 4633
 <211> 297
 <212> DNA
 <213> B.fragilis

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tattcgctct tacttaagca tcttcctatt gccaatattt tgggtttattc tatagagaca	180
gttattgccg agaaaatgca taccgtagtt gacttggcag accaaagtag ccgtatgaaa	240
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<210> 4634
 <211> 291
 <212> DNA
 <213> B.fragilis

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tttttcctgt ttggctacgt tgagcaagcg atctctaata gattttccgt agtcctttat	180
atcatcactt atagttttat ttcaagatat ttttcaaggg tctttgctat acgtagtttg	240
tttgcattgt ccatcaatag ggtaggtct cgattgggaa gtgccagata a	291

<210> 4635
 <211> 270
 <212> DNA
 <213> B.fragilis

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cagctgattc aaaaccctgt aacaatagat tctcagataa agtcaatcga tttgatgcac	180
tttggttgga atataggcaa tgcatttggc aaaccacgtt taciaacagc cacattttatc	240
aaaaaagttt tcgctcatta ctctccctga	270

<210> 4636
 <211> 1110
 <212> DNA
 <213> B.fragilis

<400> 4636	
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gttatTTTgca tcgctctgtt gacagtcggt gcttgctgct ttgctcagca aaagaaagtg	180
gcttctcata aagccacaag tgggaaccct gtatttcaag gatggtatgc tgatccggaa	240
ggcatcattt atgatgatac ttattggatt tttccaactt ggagtgatct ttacgaaaat	300
cagactTTTT tcgattgttt ctcttccaaa gatcttgtga attggacgaa acatgcttca	360
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<210> 4637

<211> 219

<212> DNA

<213> B.fragilis

<400> 4637

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gatatcgcca	caatcgccaa	tttcgcagcc	aatcaaatac	tatttgcaag	ccaatgtttt	180
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<210> 4638

<211> 384

<212> DNA

<213> B.fragilis

<400> 4638

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accaccttca	ctccacataa	aatagttatt	accgtctttc	ttgaacataa	acggaccttc	180
aacatagttc	tccggagtc	cttctttata	gacagtgcga	tttcaaaaag	gaacgagccc	240
tgtaaaatca	tcgttcaact	gtacaacatt	gcaatgcccc	caaccacat	aatacatata	300
ataatgtcca	ttatcattgt	atacaaaactg	atcgatcggt	tgcgctccat	tcactatttc	360
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<210> 4639

<211> 1983

<212> DNA

<213> B.fragilis

<400> 4639

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<211> 591

<212> DNA

<213> B.fragilis

<400> 4640

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ttacgtgaaa	ggaaaaagag	ggaaaaagaa	gagcagaggc	aaataagtc	tttagatata	180
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<210> 4641

<211> 957

<212> DNA

<213> B.fragilis

<400> 4641

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<210> 4642

<211> 189

<212> DNA

<213> B.fragilis

<400> 4642

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aatgtactcc	tgtacatcga	cattgctgat	ttgaatgggt	ttgagacttt	gaatttccca	120

tctcaccttg acgtcctctc ccgatatata gccaacagta acgatacacc aaactccggt 180
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<210> 4643

<211> 288

<212> DNA

<213> B.fragilis

<400> 4643

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cttatgttta	tcggccgtgt	gggatttatt	acactggtag	tgggcattgt	gaaacagaaa	240
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<210> 4644

<211> 1191

<212> DNA

<213> B.fragilis

<400> 4644

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<210> 4645

<211> 1611

<212> DNA

<213> B.fragilis

<400> 4645

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gatctggacg	aaaagacact	caaactgttt	cttagtaata	agtttgagac	tgccctgaaa	540
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<210> 4646
<211> 183
<212> DNA
<213> B.fragilis
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<210> 4647
<211> 2175
<212> DNA
<213> B.fragilis
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<210> 4648

<211> 237

<212> DNA

<213> B.fragilis

<400> 4648

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ggcaaaagtt	ttagatacac	taaaaccgat	gcctgcaact	actgtcacc	cggcttagag	180
caacttttccg	aaatcgctaa	aatattgttg	gtagagcctc	aaaagttata	tatctaa	237

<210> 4649

<211> 702

<212> DNA

<213> B.fragilis

<400> 4649

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ggtgtaaacc	aattgccgga	agatgccaaag	atagctccgg	atgacgtatt	ggtgtgctat	660
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<210> 4650

<211> 255

<212> DNA

<213> B.fragilis

<400> 4650

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acaacaccgg	ccatgcaccg	gaaatcattt	aaagagcaag	aaccggctat	tttttccatt	180
atcggattcg	ccgttgcccta	tattgctgcc	ctgattatca	accgcatcat	caagacgaga	240
aaaactcacc	attaa					255

<210> 4651

<211> 1347

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1259)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4651

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cggaaatatg	aagcgagcgg	ttatgtaagt	gctgtggctt	cgctgaaat	catggaggcg	1020
aagacagaca	ccaccctgac	ttattattcg	gatttgagct	atttcttcgg	accgggagca	1080
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<210> 4652

<211> 3210

<212> DNA

<213> B.fragilis

<400> 4652

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<210> 4653

<211> 198

<212> DNA

<213> B.fragilis

<400> 4653

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tcgttgacga	tggcacgggc	aatggccaca	cgctgctgct	gtccgccgga	cagcgaatct	180
acatcacgat	attcgtaa					198

<210> 4654

<211> 1188

<212> DNA

<213> B.fragilis

<400> 4654

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aaactggaca	cagctatcat	cgctaacgga	acatttacct	tcgaagcgcc	acaggattcc	300
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aacagtatcc	cccacaccat	gttggtggac	gctgacggaa	cgatcctggc	acgcggcctg	1140
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<210> 4655

<211> 615

<212> DNA

<213> B.fragilis

<400> 4655

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<210> 4656

<211> 1794

<212> DNA

<213> B.fragilis

<400> 4656

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<210> 4657

<211> 597

<212> DNA

<213> B.fragilis

<400> 4657

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<210> 4658

<211> 891

<212> DNA

<213> B.fragilis

<400> 4658

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<210> 4659

<211> 600

<212> DNA

<213> B.fragilis

<400> 4659

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<210> 4660

<211> 1407

<212> DNA

<213> B.fragilis

<400> 4660

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<210> 4661

<211> 915

<212> DNA

<213> B.fragilis

<400> 4661

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<210> 4662
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 <212> DNA
 <213> B.fragilis

<400> 4662
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<210> 4663
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 <212> DNA
 <213> B.fragilis

<400> 4663
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 ccgacaggaa ggagcatgcc gcatccgaaa ccttcgatca cccgccagaa gatcagctct 180
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<210> 4664
 <211> 2598
 <212> DNA
 <213> B.fragilis

<400> 4664
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<211> 696

<212> DNA

<213> B.fragilis

<400> 4665

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<211> 1071

<212> DNA

<213> B.fragilis

<400> 4666

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 <212> DNA
 <213> B.fragilis

<400> 4667

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<400> 4668

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cagttgctgg	caatcgacgt	caatctggat	acgaccgaaa	tgctcgatgt	agcctgggga	1260
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<210> 4669

<211> 1218
 <212> DNA
 <213> B.fragilis

<400> 4669

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ggcacaaaac	ctcacacaaa	taaagggtgaa	cgcattgaata	aattgccaga	agaatcaga	180
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gaagcgggta	ccacatactc	cgacttcaat	atttcggcaa	atatcaccca	ttatgacccc	480
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taaccggaat	tacaaggatt	caatagtatc	aaaactttgt	gtgatcatct	gatattcaga	1140
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<210> 4670
 <211> 1800
 <212> DNA
 <213> B.fragilis

<400> 4670

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accaggaac	ctctggtggg	tgccaccatc	accctgaaaag	aaaaaccgtc	tgtcggcacc	180
accaccgata	cgggaaggacg	ctacaccctg	acactgccgg	accagaaaga	atataccgta	240
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acacgtactc	cgaactact	gaaagatgct	cgcgcatca	cccggtaat	cacagccggc	420
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aagatatatc	aataccccac	gggtagacat	tgccggaata	gatgccaatg	cctctgcca	1740
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<210> 4671

<211> 1872

<212> DNA

<213> B.fragilis

<400> 4671

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cagaaccaga	agcacgagaa	ggatgcggtc	attgctgcca	atggcggtag	tgccgaacgt	300
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accttcgtgg	agtttttcaa	gaattccggg	tacgaagggtg	gtggcaaaga	gtacaaacca	1860
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<210> 4672

<211> 429

<212> DNA

<213> B.fragilis

<400> 4672

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gtggcggtga	gttgtgccaa	ttatgggtcac	gacgcttatt	ttataaccaa	actgcctgaa	180
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cccagtaaa	tgattttacga	tcgtgcccac	tctgcccattg	ccgaggccgt	tgacgcggac	360
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gccatctaa						429

<210> 4673
 <211> 360
 <212> DNA
 <213> B.fragilis

<400> 4673
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 acgttggagg ccgacggggtt ggtggaacgg aaagcatatg cgggaagtacc accgaggggtg 240
 gaatattgcc tgacggaaat gggacatagt ttgattccac acgtcgaagc attgggttga 300
 tgggcactgg atcatatgac aatgattttt gaacatagag aacaacagaa agggttatga 360

<210> 4674
 <211> 759
 <212> DNA
 <213> B.fragilis

<400> 4674
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 ttgtcaatca aaacaaaacc cttatctttg caccgcctat tacgagttag tagcattaat 180
 tcaaatcatt cattaataaaa acattttattt aaaatggcaa caagaattag attgcaaaga 240
 catggacgta aaagctacgc ttctactctt atcgttattg cagacagcag agcaccacgt 300
 gatggtaaat ttacagagaa gattggtagt tacaacccta acaccaatcc tgctacagta 360
 gatttgaatt tcgaacgtgc cttgcactgg gtgctggtag gtgcacaacc ttcagacaca 420
 gttcgcaaca tcctttcacg tgaaggcgtt tatatgaaga aacacctcct cggcgggtgta 480
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 aaacagtcag gtctgtctgc tctgaaagct aaagaagagg aagctaagaa agctgaagca 600
 aaagcacgtc tggaagctga aaagaaagta aacgaagtaa aagcaaaagc attggctgaa 660
 aagaaagctg ctgaagaagc tgctaaggct gctgctgaag ctcccgcaga agaagctgct 720
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<210> 4675
 <211> 1344
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (110)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4675
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 tactactatg aagatcagga tcgtaatgcc cactcccaga ttgtctccct taatgcgcga 180
 ccagatttca agaacatctt tcgtcttatc gccgaaatca cgaatcatgg cacaacgttc 240
 taccacctta cggtcggggt actgtatctt gtcaatctgc aggctgtctg ctcccggctc 300
 gaagaaatag ctcaaatccg aataataagt cagggtggtg tctgtcttcg cctccatgat 360
 ttcaggcgaa gccacagcac ttacataaacc gctcgcttcc atattccgca aagcaatgtc 420
 gggacggcac ataaagtga tgaaatagct ggcagcttcc ggattaccgg catacttagg 480
 aatcaccagc ccgtcatacc agatgttgct tccttcccga ggcaactacat agtccaggctc 540
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 gagccatgct ttatttttgg tcatcatctc ttaccggaag tctgcctccc aaccggctat 660
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 gatggcgcgc ccgtacgcat cgcggtaact gtctttcatc aatatcttgc cggcatatct 840
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catgatttcg	ttgatatcga	aagtttgata	gacaatacga	atatacctcg	ctgtctgctc	1200
cttataatat	gcctggaaat	cttccagcac	tccgtcaccg	atgtaatcgg	cccagttata	1260
aattttcaat	accttttcgc	ggggctcacc	ggaattgtaa	caaccggaaa	gcataaacga	1320
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<210> 4676

<211> 465

<212> DNA

<213> B.fragilis

<400> 4676

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gatatgttcg	ctctatatga	tgaagacaag	ctcagggcgg	tttggtggtg	tactaacgag	180
gggaaaggaa	tttacgaatt	aaagaatatc	gcaacttgtc	cggatagcca	gcgtaaggga	240
tatggtaaaa	gcctgattga	atatctgttt	caccattatt	cagaccgatg	ctcggtcatg	300
tttggtggaa	cgggagatac	tccacatacg	cttttattct	atcaatcctg	cggatttatt	360
ccttcccatac	gtattaagaa	ttttttcacc	gaccattatg	atcatacctat	ttatgagaac	420
ggcatccggc	tcagggatat	ggtttatttg	aagagggaaa	aataa		465

<210> 4677

<211> 732

<212> DNA

<213> B.fragilis

<400> 4677

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ataagcacct	tggtgcatac	cgagaagctg	gatggagaga	ataattgttt	gagcagatat	180
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<210> 4678

<211> 1116

<212> DNA

<213> B.fragilis

<400> 4678

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gctgtacata	ctcgcatgg	gctcgaagca	ttgctgcgac	aacctgccta	tccgatgctt	180
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gagactactg	tccgtactct	tctttataga	gatatacctg	ctcctttcaa	tatacgcgag	360
catatagctt	cactggtag	ccatcatggt	ctgcctattt	ggttgatgga	acgcgaagat	420
ccttttaaagc	gtgcttgtga	ggcttcgctg	aggctggaca	cctcgttgct	gaaacaattg	480
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gaagttccgg	aaacggttct	ggataagatg	ttaggtagggt	tgggaagtcc	tcagttgaca	1080
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<210> 4679

<211> 198

<212> DNA

<213> B.fragilis

<400> 4679

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gatcaggggt	tagtcgggtt	cctaaagccc	aaccgcaccg	gtgaagcccg	atgcaaaaca	120
cggttattat	tccctgtcct	acctgttggg	gtgatgtgga	aacggaggaa	gtgccacccc	180
cccggcctga	ggaatttag					198

<210> 4680

<211> 186

<212> DNA

<213> B.fragilis

<400> 4680

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<210> 4681

<211> 1548

<212> DNA

<213> B.fragilis

<400> 4681

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<210> 4682

<211> 930

<212> DNA

<213> B.fragilis

<400> 4682

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<210> 4683

<211> 186

<212> DNA

<213> B.fragilis

<400> 4683

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<210> 4684

<211> 354

<212> DNA

<213> B.fragilis

<400> 4684

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<210> 4685

<211> 417

<212> DNA

<213> B.fragilis

<400> 4685

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<210> 4686

<211> 636

<212> DNA

<213> B.fragilis

<400> 4686

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<210> 4687

<211> 300

<212> DNA

<213> B.fragilis

<400> 4687

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<210> 4688

<211> 4404

<212> DNA

<213> B.fragilis

<400> 4688

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4404

<210> 4689

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<212> DNA

<213> B.fragilis

<400> 4689

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<210> 4690

<211> 267

<212> DNA

<213> B.fragilis

<400> 4690

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<211> 810

<212> DNA

<213> B.fragilis

<400> 4691

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<210> 4692

<211> 414

<212> DNA

<213> B.fragilis

<400> 4692

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<210> 4693

<211> 1254

<212> DNA

<213> B.fragilis

<400> 4693

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<211> 783

<212> DNA

<213> B.fragilis

<400> 4694

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<211> 558
 <212> DNA
 <213> B.fragilis

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 <211> 684
 <212> DNA
 <213> B.fragilis

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<210> 4697
 <211> 600
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 <213> B.fragilis

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<210> 4698
 <211> 663
 <212> DNA
 <213> B.fragilis

<400> 4698
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<210> 4699

<211> 393

<212> DNA

<213> B.fragilis

<400> 4699

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<210> 4700

<211> 2523

<212> DNA

<213> B.fragilis

<400> 4700

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<211> 705

<212> DNA

<213> B.fragilis

<400> 4701

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<211> 240

<212> DNA

<213> B.fragilis

<400> 4702

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<211> 1413

<212> DNA

<213> B.fragilis

<400> 4703

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<210> 4704

<211> 615

<212> DNA

<213> B.fragilis

<400> 4704

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<210> 4705

<211> 1320

<212> DNA

<213> B.fragilis

<400> 4705

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<211> 1782

<212> DNA

<213> B.fragilis

<400> 4706

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<210> 4707

<211> 807

<212> DNA

<213> B.fragilis

<400> 4707

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<210> 4708

<211> 219

<212> DNA

<213> B.fragilis

<400> 4708

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<210> 4709

<211> 402

<212> DNA

<213> B.fragilis

<400> 4709

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<210> 4710

<211> 2067

<212> DNA

<213> B.fragilis

<400> 4710

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<210> 4711

<211> 492

<212> DNA

<213> B.fragilis

<400> 4711

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<210> 4712

<211> 1623

<212> DNA

<213> B.fragilis

<400> 4712

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<210> 4713

<211> 198

<212> DNA

<213> B.fragilis

<400> 4713

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gtttcatatg	ttcttgatta	tgtattgatt	aatgatgtta	ttattgagat	catcggtatt	180
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<210> 4714

<211> 228

<212> DNA

<213> B.fragilis

<400> 4714

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ggtactgtgg	gtttgtggtt	tgagcaagcc	acacatatca	ttgcgcaggc	tgctcccaat	180
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<210> 4715

<211> 204

<212> DNA

<213> B.fragilis

<400> 4715

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<210> 4716

<211> 1560

<212> DNA

<213> B.fragilis

<400> 4716

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<210> 4717

<211> 2208

<212> DNA

<213> B.fragilis

<400> 4717

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<211> 195

<212> DNA
<213> B.fragilis

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 aaaagaaagt tctaa 195

<210> 4719
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 4719
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 gttttcatga tactttttta taataaaatt atttatctaa atcttttcta cgcttcaggg 180
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<210> 4720
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 <212> DNA
 <213> B.fragilis

<400> 4720
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<210> 4721
 <211> 1092
 <212> DNA
 <213> B.fragilis

<400> 4721
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<210> 4722

<211> 1926
 <212> DNA
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<400> 4722

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<210> 4723

<211> 474
 <212> DNA
 <213> B.fragilis

<400> 4723

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<210> 4724

<211> 1182
 <212> DNA
 <213> B.fragilis

[illegible]

<213> B.fragilis

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tactcaaccg	ttgtgtggaa	aaatgtcaaa	ctcacctcgg	gaggagaata	tcattcgtgt	2040
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<210> 4726

<211> 1173

<212> DNA

<213> B.fragilis

<400> 4726

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<210> 4727

<211> 615

<212> DNA

<213> B.fragilis

<400> 4727

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<210> 4728

<211> 1821

<212> DNA

<213> B.fragilis

<400> 4728

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<210> 4729

<211> 1410

<212> DNA

<213> B.fragilis

<400> 4729

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 <211> 1143
 <212> DNA
 <213> B.fragilis

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<212> DNA
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<400> 4732

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<212> DNA

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<400> 4733

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<210> 4738

<211> 2649

<212> DNA

<213> B.fragilis

<400> 4738

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ctgaataata	agaaggtcgt	ttcggaacct	gtgtggtttg	aaaccggaaa	attttcggca	420
acggattggg	aagcttccgt	gattaccgat	gggtatgata	aagactacga	accctctccg	480
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<210> 4739

<211> 819

<212> DNA

<213> B.fragilis

<400> 4739

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ttatatctcc	cggcaggaaa	cgaggctcgt	atcaaagctg	cttatgacag	ccgtgatcct	180
cgtttatccc	aaactgtcat	cactccatat	gctacatatg	acggttcggg	aaacagtgtg	240
gaccacacct	tcaacttcacg	ctggccctac	tatggtgctg	acaccgatta	tccttatgac	300
ttacgtactg	acactcagag	ccattttatac	tatttggttc	gcaaatttgt	tgctgaagggt	360
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gaatggctga	ataaagtacg	ccaacgtgcc	ggtgttgac	tggtgaacag	caatactgcc	540
actatggttc	agggacagga	agatatgcgc	gttcgtatcc	agaatgaatt	ccgctgggaa	600
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aaattttaata	atgctgatgg	tacagccggg	atgaaagatg	tatgggggac	tatcacctat	720
ccttacacat	ggggaggaga	ccaatattat	gtatggccaa	tcccaaaaca	tgaaactgat	780
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<210> 4740

<211> 1065

<212> DNA

<213> B.fragilis

<400> 4740

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caggctccgg	gtttctggga	tgaccagaag	aaagccgaag	cacaaatgaa	actggtgaag	120
ggactgcaaa	agtggtattga	gggatacaat	gatgtcaaga	cactgacaga	cgaactggaa	180
ctggcttttcg	atttttataa	agacgaactg	gttaccgaac	aagaagtaga	cgaggcctat	240
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gaaggcgact	atgcctacgg	gtattttgaaa	ggtgagaacg	gtgtacatcg	tttggttcgt	540
gtttccctt	ataatgcgca	gggtaagcgt	atgacttctt	ttgcttccgt	atttgtcact	600
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aaaatcgaat	gggggtcaca	gatacgaagc	tatgtctttg	acgaccgtcg	tgtaaaagac	960
catcgacta	acttccagac	ctctgatgta	aacggagtga	tggatggaaa	aatagaagga	1020
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<210> 4741

<211> 921

<212> DNA

<213> B.fragilis

<400> 4741

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atagttccca	attgccatgc	cggcagcaag	tggaaagcca	aacatgtagt	tttgattggg	120
ttggacggct	ggggttccta	cagtgtagag	aaagctaata	ttccccatat	caaacaatta	180
atgaatgatg	gttcttacac	actgaccaa	cgctctgtac	tcccttcgtc	cagtgcagtg	240
aactgggcat	ctatgttcat	gggagcaggc	ccggagctac	acggatacac	gacttggaat	300
tcaagcacc	cggatcttcc	ttcgaaagaa	ttaagtaaag	atggcatttt	tccaactata	360
ttccaattgc	tccgcgaagc	tgatccgaaa	gctgaaattg	gcactttcta	cgaatgggtc	420
ggcatcaaat	atctggtgga	tacgctggca	gtaaacaaat	acaaccaagg	gattaactac	480
gaaaaacatc	ctacggaact	atgcgaaaca	gccgtgaagt	atattaaaga	gaaaaagccg	540
gctttaacac	ttattgcttg	ggataatccg	gatcatgtgg	gacataagga	aggatcatgat	600
acaccagcct	attatcacia	actcgaagaa	atagacggat	acatcggaac	agtaatgaat	660
gcggtgaaag	aagccggaat	actggatgaa	acgattttta	taataacatc	cgaccatggc	720
ggaatcaata	aagggcacgg	aggaaagaca	atgcaggaga	tggagactcc	gttcatcatc	780
tcggggaaaa	atatcaagaa	agggcatgaa	attcaggcca	gcatgatgca	gtttgacgta	840
gctgctaccg	tggtgccc	tttcaaactc	aagcagccac	aagtatggat	cgggaaggccc	900
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<210> 4742

<211> 408

<212> DNA

<213> B.fragilis

<400> 4742

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ttgaaattcc	cggagtatga	ccctgagttt	cttgattttc	cgaatgcact	taaataatttc	180
atctctcttt	gtggtactcc	caattatctt	tatgcccttt	ataacgggtt	cccggttact	240
tcgggtgaat	caaagattat	ggtctttacc	tggcaagggtg	ctccggatgc	catctatcag	300
acagatgtaa	aattggaaa	aattgctgat	gctccatccg	gtagatatgt	attgggactg	360
aatataacgg	aagaagtagg	gagtgatgtg	ctgaagtttg	aacttttag		408

<210> 4743

<211> 1545

<212> DNA

<213> B.fragilis

<400> 4743

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cccgtcctt	ctgcgataga	gacacataaa	ggtacattct	cttatgacga	agtttcggct	180
aagtgtgtac	gaactactat	ctctaagtct	ctacctgcta	tcggcataga	atactcggt	240
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gaagaaactt	atcgttttat	cagcgatgta	ctcgatgaaa	tagtagccct	cttcccggct	840
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gaccgtaagt	accagttgct	gaaagcgctt	gagcaaggct	atcaggtagt	cctgactcca	1140
cgtcgcccgc	tgtatggcga	tttcgtacag	gatgcctcac	ataaagtggg	acgctattgg	1200
gatggattca	atccgttgca	agacatatat	gccttgccc	aaccgatcag	tcactttttt	1260
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gaatatctga	aggagcaagg	catctattat	ttcgatgtga	ttcaccaca	agaaactccc	1500
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<210> 4744

<211> 1215

<212> DNA

<213> B.fragilis

<400> 4744

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ctcggtttgg	ccatcgacac	catcgaaagca	agcggaaaat	gtctcaatcc	tgtaactctc	180
aatagagatg	gatctgtata	ttactgcgga	tatgccgatt	ggcgcagtgg	attttttccc	240
ggtagatct	ggatatctgta	cgaactgaca	ggtgacacca	gctatcttcc	actggccaga	300
aaatatactg	aagccattcg	cccggccgag	cacctgacct	ggcatcacga	tataggattc	360
atcatthaatt	gcagtttttg	taacggcctg	aggctcgctc	ccgatacagc	ttcatataaa	420
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ggcactaacg	gcaattttat	cctgatgcat	agcgtaggca	gtattccgca	taatagttaa	1140
atcgacgtac	ctctgaacta	tgcagactac	tactttcttg	aagccctgaa	gcgtagaaaa	1200
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<210> 4745

<211> 1425

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1175)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4745

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atttcttacc	atctgaagct	gttggagcag	gatatatcta	tttggataga	tgactggcaa	180
atgcgaaaag	ttttgtttta	tttgcttttcg	aacgcattta	aacatgttcc	ggataaagga	240
gaaataagca	tattaacctc	taccacaccg	gatcagggtg	ttattgcagt	taaggattcc	300
gggaatggca	ttagtaaaga	agaacaggaa	cggatatttg	atcgttttta	tcaggcggac	360
aatcggaata	aagcgattca	tgttggcact	ggtatcggac	ttgcattaac	gaaaagtatc	420
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aaaaaggatg	attctacatt	cgaaactccc	ttgatagatg	aacgggaagg	gaaacggaaa	660
gtattattgg	tagaagataa	tgtggagcct	ttgcaggtag	tcaaagaaat	attttcatca	720
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aatttttaaag	cattgacagg	gatgacaccc	aatgaattta	ttctaaatca	ccggttgaaa	1260
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ttaggttttcg	gttctccacg	ctatttcagc	cgttgtttta	aaaatcaata	taacgttact	1380
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<210> 4746

<211> 1113

<212> DNA

<213> B.fragilis

<400> 4746

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agccgcgaag	aagaaaaagc	agccgactat	ctgcaaaatt	atatcgaggc	cgaaggcatg	180
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cgttcgcata	cggccgatga	atatatcatg	attaaagaaa	tagaagaggc	attggaattg	1080
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<210> 4747
 <211> 513
 <212> DNA
 <213> B.fragilis

<400> 4747
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 gattggatct ttcattgcgt ggacgaacaa ttacaaacta ccattgatca tttcaaggct 360
 aaccacgatt tatcgagata taaatataag cgtgcatttg tatgtaataa aaggcatcct 420
 aacttttaggg tcagctataa ggacaaaatg acatcatttt cgatgaaaaa cggatttcgt 480
 ttgaatctgg ttagagaaat tatttttaag taa 513

<210> 4748
 <211> 897
 <212> DNA
 <213> B.fragilis

<400> 4748
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 attttctctt ttttcataaa aattttcttt actttccctc tcttttcttt tcccccttc 180
 actcttctac catctctttt cttttttctc cgtttttctc tcatttcttt ctccttatcc 240
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 cttttttctc ttcttattcc aactcctctc ttcttttccc atttattcct cttttcttct 360
 ctctcctttc tttctatttc ctttctctc attctttcct tcctatcctc ttacttcctc 420
 ttttctttcc cccttcttat cactttctct tcagaaactc tcctcctttt ctttctcctt 480
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 cttttccatc ttgcttttt ctaccctgtc ctttttcttt ccttaccttc tccttcttct 600
 ccctctctta ttcttccact ctattccctc ctgctctgtc cccctcctcc tccttctctc 660
 tcctctctat tcacccctat tcctctctc cttttatctt tccttttcca tatcttccat 720
 cctccttttt cttctctcct aactttcccc tccctttccc ctttcttctt tctccatctt 780
 ttctctctat tctctccctc tccacttctt ttttgttatc tccctcttc tttccccctc 840
 tcttctttcc catataatta ctctctcttt cttctctctc actctccact atctttc 897

<210> 4749
 <211> 210
 <212> DNA
 <213> B.fragilis

<400> 4749
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 aattatatcg tttctgctgt aatacagata aaaagcaata aaattcttct ttttacagac 120
 tcgtactttt ctttctccgg atcaactagg acggtagaag tgagaaatgg ctggtttctt 180
 tggcgaagaa ccgctctttt gagtcggtag 210

<210> 4750
 <211> 1218
 <212> DNA
 <213> B.fragilis

<400> 4750
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 attgtcttgc ccgatctgac tgcaggaagt actgaggag ttatcgactt tgccggagta 120
 acttccggca tgctgactca cgatggagga caggatacgg ataataaat agccgttcgg 180

gtaaaagcaa	atgaccgttg	gagtgatgcc	ggtatgtata	ccatccggac	tgtgaaacct	240
gtcttttaaag	tgggttatta	tccgggcaat	gtttggacga	aagagtttac	tttgaacaca	300
ctcactgccg	atagcgtgaa	aaccggcaat	ttagataagt	ttaccgatat	tgcttacgaa	360
tttagtgccg	atggtaatat	ttgggagggc	atgcccggag	atttgcgaaa	ggcagggctg	420
agtcggggaa	cctcttatta	tgtgagagcg	aagtatatgg	gagaagtgcc	gggagagaaa	480
gtggagggtga	aaacgtatga	ggcgtatcc	atacccaatt	ctgattttta	tgctggatat	540
gatgtttacat	atcccaagag	tgagaatcca	ttatacacat	ttaaaggcga	ttggattggg	600
acgcgaaatc	ctttgacctg	tcatactgat	ggagctaacg	cattctatgt	atctaaatca	660
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ggagcaggaa	acacttgctc	tttcggtaat	aaagattatt	ggcttggaag	tagtggtatt	780
aatcatatca	gtgcgggtat	cgtttgcgta	ggagattatg	aggctgctgg	agatgtagtt	840
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accataattg	gcaaagctta	tttgaaatcc	ggtactgcat	attcatccta	tcaaactcaa	1020
accttgaatt	ttgagtataa	taatgaacat	agaaacttac	cgatctctca	tgtgaagatt	1080
atattttaagg	ccggtactaa	agaagatcgt	gatcacttgg	aagataagtt	tagggatgca	1140
aaagttccat	atgggtgatgc	ttatatcata	gggttcacagt	tctggctcga	ttcattcact	1200
ttacattacg	acaaataa					1218

<210> 4751

<211> 741

<212> DNA

<213> B.fragilis

<400> 4751

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aatatgaaaa	cctatatata	cctctttctc	ctcttgcttg	ctacggcttc	ctgtagcgag	120
caaactgctc	ccgatcattc	cgctcggttat	ctccgtgtag	aaaatatcat	cctcagttgt	180
gataccgaaa	cgctgcccat	tactcgtgcc	gtcgatgccg	gacttaagct	tgagatctgg	240
caaggttctg	agtgtgtacg	tagttatgat	ccgggagcag	cggaactttc	caaaaggatc	300
gttcttccgg	ttggtgaata	taccctgaag	gcctttactc	ccgatcagac	cgaggcgccg	360
gacaatgaat	cgggtacacc	catctacagc	gtcgactatc	ctttcgctat	tgtatcggag	420
gatgttactc	tgatttcggt	gaaagcgccc	caaattaata	tcgggggttg	cgttgagtat	480
tcggatgaat	ttatggcaaa	ctttacagac	ttctccgtta	ccgtaagtag	tcctacagga	540
cgtcaggcaa	gcctggcagg	taatgtgaca	gaccttttat	attttaatgt	cccgaccggt	600
ggaaccattt	taagttatac	gcttaccgcc	accaatgccg	atggagaaac	aatgacttcc	660
gaagcgcgtt	ccatccttca	ggaatcggga	gcggaactta	cttcgggaaa	ttataaagtc	720
cggatcggcc	tggttcagta	a				741

<210> 4752

<211> 600

<212> DNA

<213> B.fragilis

<400> 4752

ttctgcaagc	atatacgtat	tccttatatt	ctatttttta	gcaaagtaat	attcattttta	60
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tgttcaaaaa	gcaaaaagaa	catggaaaca	gaagaagaaa	tacagaatgt	aaatgtccat	180
cacggacata	acataaggcg	cacccggatc	gagaaaaaca	tcaagcagga	cgcattggca	240
gcaactcgtaa	acatgacaca	accgaatgta	tccaaatacg	agaagatcgc	ggtgattgag	300
gatgaaatgc	taaatagatt	cgcaagggca	ctgaatgtgc	cggtagaata	tctgaaaacg	360
ctggaagagg	atgcaccttc	tgtagtattt	gagaatatca	caaataatgt	gcatgacaat	420
aaagacagct	cagtgcccat	tacgggttat	aaaggacaag	atgccaccac	caacagcttt	480
aatccgattg	ataaaatcac	cgaactctac	gagcgtcttc	tcgaagagaa	agatgaaaaa	540
tatgccgcgc	ttgaaaaacg	gattcaaggt	ctggaacagc	aaaataacag	cggaaagtaa	600

<210> 4753

<211> 258

<212> DNA

<213> B.fragilis

<400> 4753

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cttacttggt	ttgaggtaaa	tgcttacttg	ttttccggaa	aagcaaggct	ctaccgactc	120
aaaagagcgg	ttcttcgcca	aagaaaccag	ccattttctca	cttctaccgt	cctagttgat	180
ccggagaaaag	aaaagtacga	gtctgtaaaa	agaagaattt	tattgctttt	tatctgtatt	240
acagcagaaa	cgatataa					258

<210> 4754

<211> 735

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (81), (211), (277), (388), (511), (522), (601), (607)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4754

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ctgggaggca	gtaaggctac	catcactccc	gatccgtcca	ctgtaaccaa	tttcaggaga	180
ccgcaagagt	ttgttgtcaa	ccgtttcgat	naagaagagc	tatggacggg	cgatgtggta	240
cgtaccacat	cgacaggtag	cacgggaagt	gccgatntgt	gggctacaag	agccacattg	300
aacgggggta	tgaagcaagg	aaccactccc	cgtgtggaat	acaggaagaa	gtcgggaagt	360
acctggaccg	ttgtaccgga	aacagatntg	aaactggaaa	gtgggtacaac	tttcagtacg	420
acacttaccg	gattgcaaga	tggtaccgat	tacgtttggc	gggtagtggt	cgaggaagtt	480
cctagtagcg	aatctggatt	tactaccgaa	nagatacagg	anatacctaa	cttaaacttc	540
gatacctggt	cgcagaatcc	cacaggaacc	tttaagaaga	gttgggtatcc	taatgccgat	600
ngctcanatt	ctttctgggc	aaccggaaat	gatggagtga	cctcttcact	ggcggggcagc	660
cgtgattcga	gtacccgccc	cggaagaaaa	gagcgttgtg	aacggaaagg	cggcttatat	720
ggtcacttta	tgtag					735

<210> 4755

<211> 552

<212> DNA

<213> B.fragilis

<400> 4755

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aacggaaagg	cggtttatat	ggtcacttta	tgtagtgtgc	cgcttgtagg	ggtggctgcc	120
ggcaatctgt	ttatcgggtga	ttataaaaacg	aatgcccaaa	gtcccaagga	tagccccaag	180
tttggaagctt	cgtttacggg	ggcacgtccc	accggattga	aggggtggta	taaatatact	240
tctaaaccgg	tggattatgt	cggtaatccg	gataatctga	aaaatgatga	atgccatatt	300
tatctccgtc	tgtgggacga	taaagataac	gagatcggtt	acggagagtt	catcggaaaa	360
gagacgggtga	cccaatatac	tcagttccgg	ttcgatgtga	cttataccaa	taaaacggcg	420
aagcctgcc	agataacgat	tggtgccact	tcgagccatt	atggcggtga	ctttaccggg	480
atgaagggtga	ccggttcggg	aggtgtaggc	agtgaactgt	gggtcgatga	atttgaatta	540
ttgtatgaat	aa					552

<210> 4756

<211> 990

<212> DNA

<213> B.fragilis

<400> 4756

ataagaaaga	gagctatgca	taaatctggt	ttatcttttag	tgtgttggtt	gttctttttc	60
ctgtcgtgtc	aggaagaaat	agaaacgatg	cctaacggca	gtttgaatat	cgtattgacg	120

gatgaagcgg	cggttaccgg	gactttgccg	gaggctttgt	cagatgaatt	gcggcaacag	180
ttcacgattg	agttgctgcg	tgacagagaa	gggacaatcg	tgcccgaata	caaaggtgca	240
ttgagagatt	tccgagatca	aagggtattc	aaggtaggca	gttatcaact	gaaggcttat	300
cttgagagaga	atccgtcact	ggcattggat	gcacctatt	attatggaga	agttcaagac	360
attgccatcg	agaagggtaa	agcaacgacg	gttactgtcg	gctgtaagg	agccaatg	420
ctggctactt	ttgagattgt	gaatcaagag	gtctttgata	aacgtctgaa	agattattat	480
gtggaagtca	gcgcaggggg	ggagtgcgtt	acttggaac	cgggagacgc	cacacatccc	540
tactttaaag	cgggaggccg	ggtgacaatg	gcattgatcg	gtacttctgt	agagacagg	600
caggagggaa	gttatgcttt	gaatccgac	gagacagtga	aagcgggtgt	taagtataat	660
tataagctct	ccatgaaggc	ttccaatgta	agtctagagg	tactacgga	aactcaacag	720
gaacctatta	ctatcaacga	aaccgtaccc	gacagctgg	tgccgaaggc	taaggatttt	780
agtgaggatt	tcgatgaaaa	tcatgtgttg	acttataacc	agacggcaga	tgctttgtcg	840
agagccggca	ttgcgtatac	agctttgcgt	cgggttcagg	atgtggagtt	tgcttttaac	900
tttgcgata	agcatttgga	acatctgaat	aagacgtatc	tgctgtcgga	actttccgaa	960
gaaagatcgg	cgggctttgg	gctgctgtga				990

<210> 4757

<211> 198

<212> DNA

<213> B.fragilis

<400> 4757

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gaaaatgtta	taatgtggaa	aagggtggag	aagtgcagta	gaaaaaagaa	aaaaggtgtt	120
atggagagga	aaggggcagt	gattatgaag	ggagtgaaaa	gagatacaaa	aagaagtagg	180
aagaagttaa	aagggtga					198

<210> 4758

<211> 402

<212> DNA

<213> B.fragilis

<400> 4758

ggaatacgt	tatgcttgca	gaatcaactg	ttttacgctt	attttacagc	tattgaaata	60
acaacaatac	tattacacac	tatgatcgga	ctactgacaa	ctaaagaact	tgatttcctc	120
accaaactgg	ctgaactttt	aaaagaatac	agtgccataa	tatcttacgg	tcattgtagc	180
gaactgcgta	ttcttggttg	tgctggtgac	agcgaagatg	tggaataata	tcccattata	240
tttgaggaca	gctttgatga	aaatgagatt	tatgatctgt	tgcgcaaaaa	cagaaaacgg	300
atcgaggaga	ttatcgaaac	tgaggtagct	gaggctgttc	ccgaaggaga	actatctcag	360
cggacgatc	aggccggatc	aatggcagac	cattttcact	aa		402

<210> 4759

<211> 1269

<212> DNA

<213> B.fragilis

<400> 4759

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tatacggttt	tgataggaaa	acagggatcg	ggaaaaagta	ccattgcaa	attatactcc	180
atgtttacgt	ggttgagaaa	ggggctggca	cgccgtatca	ccagtga	atacattacc	240
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agagaaacgg	ttatccgttt	ttatggatta	cattataact	tcttctatga	aatgaaaag	360
tttcatgtcg	aagccaaagg	acttccggag	tcttataagg	tagcgaagg	aatgtatgtt	420
ccagctgaac	gaaatttttt	gagtacagcc	gatgatacgg	atggattgaa	aagtctgccg	480
gaatctttag	aaaccctgct	tgaagagttt	gataaggcta	aggaggcatt	caaaaccgga	540
tatcggcttc	cattcaatga	cactgatttt	gaatatgacg	cactcaataa	gatatcgtgg	600
attaaaggca	gcgattacaa	gattcgtttg	tccgcagctt	ccagtgggta	tcagtctgtt	660
ttacctcttt	ctttaattac	cagattccta	tccgacctag	tgctggacaa	tgccaataaa	720

gaggacctga	gcattaaaga	gaagaagcag	attgaaaagg	aagtgaataa	agttatgaat	780
gataaatcac	ttacggatgg	ggtaaagtcc	gctatgttgc	gcaatatctc	atccccggtc	840
aaatatctct	gctttgtgaa	cattgtttgaa	gagatggaac	tgaatctcta	tccggagatca	900
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gtgcttacta	cgcatagtcc	ttatgtcatc	aattatctca	ctttagccgc	aaaagctttt	1020
ttgctgactc	aaaaagtatc	tgcaaataaa	actttgcaag	agagaataaa	agaggtagtt	1080
cctgctggaca	gtacgataga	tccggcgcca	ctccggattt	acgaactgaa	agacggagga	1140
gtattttagg	taagtactta	cgagggtctg	ccttctgacg	agaacttttt	gaatatccaa	1200
ttgggagtg	ctaatagaatt	gttcgatcag	ttacttgaaa	tagaacaaga	gtttgattat	1260
aaaaactaa						1269

<210> 4760

<211> 2046

<212> DNA

<213> B.fragilis

<400> 4760

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caacatcagg	gatatccggt	gactatggag	aagaaccccg	atggtacttg	gaccgaggga	120
gccgatata	tccgatgggc	aggttttcta	gaaggaaact	cctggcaaaa	ggacaataaa	180
ctggatgtac	gcaatacgac	gaccttaacg	tatacaccta	taaaacagca	attgatcttc	240
aaaggtgact	ttacttatta	cagcagcaag	tctactcggc	taagagccga	gaaccagtac	300
aattactata	cgggaccgga	aataatggga	actcgttaata	cattcagttc	tctggaaaat	360
atggattata	acaggggaata	tatatcaagc	aataattactg	gtaactatat	tcctaaatct	420
tctaattccg	atcattacct	aaatgtactg	ttgggctgga	atcttgagca	ccaggattat	480
aaaacgatac	aaacttatcg	ccgtggtctg	attagtcca	ctaagccgag	ttttgctctt	540
atggatgggtg	attattatac	tacgggacaa	ggcggaatg	agtgggctta	tgtgggtttc	600
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actactccga	atatcgttcc	caacagtctg	acttgggaga	aatcgacaac	ttatgatatt	960
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cctaagggtta	acaatgcaga	gatgaaaacc	aagggtctggg	aactttcggg	catgtggcgt	1140
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aacactgatg	cttattggcc	ccgctaccgc	ggctatctgg	cgaatgggtc	tacaaaggcg	1740
ctgggtatcc	aggccaatga	ccgctattta	cagaatatag	cttatgtccg	tttgaagaat	1800
cttcagatag	attatacttt	taataagaag	ttttgcgata	aactgcactt	gcaggatttg	1860
aagattttacc	ttgctgggtga	gaatctgttg	acatggacac	cgctgaacaa	gcataccaaa	1920
atgtatgacc	ccgaagggtat	cagtgccggt	gatgcagatt	tccgttctac	tgccaataact	1980
gatggagacg	gatatgggtta	tcctattttg	agcagttata	caatcggtat	taatgtaacc	2040
ttttaa						2046

<210> 4761

<211> 573

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (140), (188)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4761

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gcctatcttg	aacagattga	ctatgccaca	aacagggggc	tggagcgcaa	tcagatggaa	120
cgcctcgcca	cccttgattn	tgtgcataaa	ggacagaacc	tttttatcac	aggttcttca	180
ggaacggnga	aaagctatct	ggcttgtgcg	cttgggtcag	aggcatgcaa	gaagggattc	240
cgcactttat	atgccaatgc	cccaaaaactg	cttggcgcac	tgaaagtggc	caaggtcaaa	300
ggtacacagg	aaacagaact	caagaagatc	gagcgtgtc	agttgctcat	tcttgacgac	360
ttgttccttg	tacctcttga	tgccaaggaa	cgtcccatac	tgctcgaaat	tattgaagac	420
aggcatgaac	gaaaatccat	catcataact	tgcagtatc	catcgttcaa	ttggtatgac	480
atggtagggtg	acccgacaat	agcagatgcc	atccttgacc	gcattcattca	cacggctcat	540
accatagaat	tatacgggtga	aagcatgcgt	tag			573

<210> 4762

<211> 267

<212> DNA

<213> B.fragilis

<400> 4762

tgtaaccttt	taacacagaa	gatgagtatg	aaaaaatatt	ggttgatagg	tctgtatgct	60
ttggctctga	cctcttgtga	tagtTTTTTg	aattgtgagc	ccgagaacag	TTTTTcttcc	120
gaaggctttc	tggagtcgca	atcggattta	cggctttata	caaattggttt	tttacaagt	180
ttcctgcca	gcgaagaaac	aatagcttgg	ggtggcgacc	agtatgcgtc	ttcaccacgg	240
ggctggaagg	atcagcgcgg	tgcaaaa				267

<210> 4763

<211> 393

<212> DNA

<213> B.fragilis

<400> 4763

tctcattcgc	gtacaaggag	catggaaaagg	aaagtgtccg	cggtagcagg	cggcggatcg	60
ttgggtagaa	gccattatgt	gaacggtaag	ttcatagcaa	gtaacctggg	tatcatactt	120
acaccgacaa	ataatcccga	ataccccata	aacgtgcggg	tctatagcat	gtattcaaat	180
gccataagaa	agcagattgt	taacgagctt	gcgaacggaa	catccaagct	caccattccg	240
gtaaatgacc	tgatgaacta	ttatgtggag	tattttcaca	taagcaaaca	gaacgggctg	300
gttgaatatt	gcaataaggc	gattgttact	ttacaacaga	aattggataa	agaaaaagat	360
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<210> 4764

<211> 624

<212> DNA

<213> B.fragilis

<400> 4764

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tacaggctga	ctgatatcca	ttggcccggc	ctggcagttg	acctgaacca	tgacggtata	180
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accgccagcg	tatctgacgg	catggtattt	tctcacgatg	aaacctgggc	aaggcctgca	300
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tgctcaggaa	tccatggcat	ccaggttact	ttgcgtgctg	atgtggattc	cttcagtctg	420
cagtcaaat	gcagcaggat	atttcccgc	tacaatgacc	gggatgacgt	tttctgggc	480
aacatcaaag	atatcagcct	ggttgctctg	tcatatgatg	ccgcgtcatt	cagaatcggc	540
gtgcattgca	cactccctta	cgaccgtcct	gacggaacac	aggagctgaa	cgagaattat	600
ttgtattacg	agtattcaag	gtag				624

<210> 4765
 <211> 240
 <212> DNA
 <213> B.fragilis

<400> 4765
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 catcccggaa caggcaatcc tttcaagggg accggccgct ctgcaattac cgcacggatg 180
 aattacaact cctcatatac cgatatcatg ctttacaaca atatggcttg tactgcctga 240

<210> 4766
 <211> 279
 <212> DNA
 <213> B.fragilis

<400> 4766
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 tactactata cccatcacga agaatggcca caaaagatcg tactcgatgt tttcatgaaa 180
 ctttgggaaac tggaaaagcc actttacttt gccctttttg ggcaaatagg atttaccacc 240
 cttggccgcg atatgattga ccctttaaaa tcctgggtga 279

<210> 4767
 <211> 471
 <212> DNA
 <213> B.fragilis

<400> 4767
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 gactggtata atgaattggg aagacgcgat gccgatcctt cactggataa agtgcgtgtc 180
 aatgataagg gggaaatatga atactttggt aatactaact ggctggatat catttataaa 240
 gatcagaact attccactga acataatgtc agcattagtg ggggaaatga acgtgcccg 300
 tattatgtgt caggacgtta ctacaatcag gatggcattt acaatgcccg agacgaaaag 360
 tatacgcagt ataatatccg ttcaaaagga gaaatacaaa tcaataaatc tcttttgttg 420
 gagaataata cggaatgtca tgatttttccg ttccccacca gcctatgggtg a 471

<210> 4768
 <211> 900
 <212> DNA
 <213> B.fragilis

<400> 4768
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 tttgtattag agggagggat gttgcttgct gctaactctaa ttccagtga aggtgtagta 180
 aaagacacct caggagaacc gctggccggc gttacgggtga gaatcaaaga cggaaagtcg 240
 ggaacaatca ctgatgtgaa cgggtatatt gtcttggtat tagaaaaagg aaaaaaactg 300
 ttgttgagct atatcggata ttcagaaaaca gaagtactgg taaaagatga tcagcaaattg 360
 cagatcgtac ttaaggaaga tgtgcaacag ttgcaggaag tgggtggctgt aggttacggg 420
 acggcaaaga aagtaaattt ggtgggtgct gtggaccaga ttgatagcaa gcggattgca 480
 gagcgcagca acagtaacat ttcccgttcg ttgcaaggca tggatccggg actgaacatt 540
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 attggtgcgg gtggtagtgc ccttgtgttg ataaacggag tggagggtga tctcaactcg 660
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 aagacgaaaa tcaattataa cggaagtttc tccatgcac agcgtacggg gaagacagaa 840

gatggtatcg ttagtaatgg tttgcagtgg accgatggct ggtatacagc ttattttgtaa 900

<210> 4769

<211> 1803

<212> DNA

<213> B.fragilis

<400> 4769

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gaaagcgggtg	ggcagccccg	tttggatgat	tccggttggg	tagcagctac	catccctcat	180
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cgtggagcag	atcatgaaac	catgttttgt	gggtagtgcg	atataaacag	aattcccagg	1740
tgcagggtact	atatgatgca	gagcattttt	cgtcaagaaa	tatccctccc	cgcgaatata	1800
ttaa						1803

<210> 4770

<211> 1125

<212> DNA

<213> B.fragilis

<400> 4770

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agctggctct	ccatctgggt	gcattgaattg	ggggccgagg	tgattgggtg	ggctcaagac	180
cctttttacgg	ctcgagacaa	tttcgtactt	tccggtatcg	gcgagaaaaat	taaggccgac	240
cttcgtgccg	atatccgcga	tgggtgagcgt	ataaaggcta	tcttttcagga	atatcaacct	300
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gaaacctacg	aaaccaatgt	aatgggaaca	atccatgttc	ttgaggcagt	ccgttctacg	420
gatagcgtga	aggtaggtgt	gatgattacc	acagataaat	gttacgagaa	taaggagcaa	480
atctggggct	atcgtgaaaa	cgagcctatg	ggcgggttatg	acccttatcc	cagtagcaag	540
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aattacgggt	ccggtgaact	tcgtgacctt	tctgatccgc	atgctgtgca	tgaagcgaag	960
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attgagcaga	cggttgagtt	gacgggtggac	tgggtataaaa	gataccggga	agaagaggta	1080
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<210> 4771

<211> 894

<212> DNA

<213> B.fragilis

<400> 4771

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aatcttgacg	ccgaggtgct	gaagagaggt	gaagaactct	ttgtcttgga	caatttattt	120
cgttatggga	gtggttccaa	tcttgagtgg	ttacgtacga	aagggtgactt	tacatattat	180
ccttatgaca	cccgaatac	caacgatgtc	gaaacggtaa	taaaggaggt	acagccggat	240
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catttcaggg	aagagtctac	ccgttatgtt	tgcgaagaat	accctaattg	ctttcctgaa	480
tcgatttctt	tggattttca	ctctccttac	ggttggtcaa	agggttgtgc	cgaccaatac	540
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tacggcagta	atcagcacgc	tacctacgat	cagggatgga	ttggctgggt	ctgtcagaaa	660
gctctggaga	tcaagaatca	tactttgcaa	aaacctttta	caatctcggg	taccggtaaa	720
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attgacaaa	cttatggcga	ggtgtttaat	attggagggtg	gtatagaaaa	cagtctttct	840
ttgtcttcac	cacggggctg	caatgagcgc	tgccattggg	gaatgggggg	tcga	894

<210> 4772

<211> 921

<212> DNA

<213> B.fragilis

<400> 4772

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atcgatcagc	ccttctttac	atcttatccc	tccattgaaa	caacggaaact	ggattttgga	180
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ggcagttctg	aagagtattg	ttctgaacaa	tccccctttc	gggaggaaga	ccgtgagtgc	420
cctaactctc	cgtatgcctt	gggtcaagcaa	ttgacaacca	atacctccat	gatgctgtat	480
cgggaattatg	gctttccgat	aatgggtgtc	cgccccggta	atgtgtttgg	cccgtctcag	540
aataaggata	aattcatccc	ctatgttgct	ggacaactga	gatccgggct	tcctttgaat	600
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gatgtgaatt	acggtgcttt	accctatcgg	gagaatgaag	ctatggatct	taaatgctcc	840
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<210> 4773

<211> 261

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (33), (71)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4773

gagacaaaat attcattcgg cgggggtgcc acngtcacct cttttcatat cgcaagcgg	60
cgggggcaaa naaagacata tctgtggggg cgatttcgac cacaagacat tacattcgat	120
ccgatacggg gagaccaaca attagcatac cccccgatcc gttttattgg gacgcgtacc	180
tctgatacaa ccccgggccga caaaaaggca catcatacgc gtcgagtcaa tgcaacaatc	240
gagttacttg atcgagctta g	261

<210> 4774

<211> 246

<212> DNA

<213> B.fragilis

<400> 4774

gtcagcagga aacgttcggt cccgagatat ttctgtacac gccggatacg cccgcccgtt	60
tgggtgttca gcccggtatc aaccatcgag actttccagc actcggaatg gttgttcaca	120
atgggtggtcg tattgctgga aaggcacacc gccatttcgg tgttattgcg gaaaaaagt	180
ggcgaaacac tccttgatga aaaatggggg ctggccgcga cattctccaa aagggggggg	240
tgggtga	246

<210> 4775

<211> 210

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (56)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4775

cccactttct tttttggagc gggctggata accgaagaaa gacgaggggt gggacncacc	60
gccgatgtaa taaacaatcg ctctttgatt tttttcccgga tcgatggaat gttgtattgg	120
atttcgggaa tctgcctccc gtcccatcc aagagagaga ttgggggttt tgttgctaag	180
ctcgatcaag taactcgatt gttgcattga	210

<210> 4776

<211> 858

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (11), (50)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4776

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aagcgaaata agggaaaaaa ggcccccccc cgtgttactt caactcgcc cccccccaa	120
aatatgtggt ggtgggttat aaaaaccacc aaaaagtitt ctttcggtga aaacaccttc	180
tcgtgctcac attttttcaa aaaagcaatt caccaccccc cccttttgga gaatgtcgcg	240
gccagacccc attttttcatc aaggagtgtt tcgccaactt ttttcgcaa taacaccgaa	300
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aaagtctcga tggttgatac cgggctgaac acccaaacgg gcgggcgtat ccggcgtgta	420
cagaaatatc tcgggaacga acgtttcctg ctgacctatg gtgacggtgt caccgacctg	480
aacatcggtg atacctgaa ggctcacgag tcttcggact gcctcctttc ccttacggcc	540
tacaaacccg gtggtaagtt cggcgccctg cagctcgatc tcgatacgga caaggtcctc	600

tctttccagg	agaagcccga	cggggaccgt	aactggatca	atgcgggcta	ttttgtgtgt	660
gaacccgaag	tgttcgatta	tatccctgag	ggtgactcca	ccatctttga	gcggcaaccc	720
ctcgagtcta	tagccaaggc	gggcccgatg	catgctttcc	gtcatacggg	tttctggaaa	780
ccgatggata	ctctgagaga	caatacagaa	ttgaatgaaa	tgtgggatca	gggagtcgct	840
ccctggaaa	tgtggttaa					858

<210> 4777

<211> 2538

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1253), (1893)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4777

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atatcgaaa	tagtgaagaa	attggatatg	ttggatggat	atgcatatgc	gatgtatagg	240
aatgaagcag	cgcagatggt	taatgaatac	gagaatgcga	atgaagcaat	tccatatccg	300
ggtacttcca	aagtagatcc	cagtagccgt	gaatctgttt	attctcctgg	accggaggac	360
tatcggaatg	gtacatatcc	tagcgtaaat	tggcaggatg	aagtatttga	aacagcattt	420
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gatccgttct	atgcgaaaga	gtcggaggct	gtatgtaaag	caatggtagg	tgaggtaaaa	1980
tataaggatt	ttgatgggg	agccggtatt	acgaatgccg	atcgtcagggt	aattgggtgaa	2040
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aatcgggaga	atgccaaatg	gccgaaagct	tatgccggct	atgggagaa	aatgaagt	2280
tccgaccgt	ctgagaaga	tggatcttat	ctgagaatga	agaacattaa	tctgggctat	2340
aagttttatt	ctccattcaa	aggaatcgaa	tctatcaatc	tgtttgcttc	cgtagtaaat	2400
gtatttacca	tttcgggata	tagttggtat	gatccggatg	taaattcttt	cggaagtgat	2460
gcttcccgtc	gtggtgtaga	cttatttcta	tatccaagca	gtcgcacctt	ctcatttggt	2520

ttacaatgta cattctga

2538

<210> 4778

<211> 795

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (21), (40), (45)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4778

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attaccgatg	ctaacgatgg	atcttcattg	atcggagcca	atgttctggt	taaagggtgcc	180
ggaaccgggt	ctattgccaa	tgtggacggt	aagtatagtg	ttaacgtccc	aaatggtaag	240
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caaaaagtgc	tcaatgtgat	catgaaagag	gatactgaac	tactggatga	agtagtagtt	360
ataggctatg	gctctatgaa	gaagagtgc	ttgactgggt	cggtcaccag	catcaaaagt	420
gaagatttaa	tgaaaacaaa	cccgattagt	attaatcagg	gactccaagg	gcgtattgca	480
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ggtgctaatt	cattctccac	ctctaccgaa	ccgctttata	tcgtggatgg	tattcctttt	600
accagtatg	gaatgccggg	aacaggcaaa	gacggtatga	tgcagacagc	caatccgctt	660
tcgacaatta	atccgtcgga	tatcgaatct	attgagatct	ttgaaagatg	cctctgccac	720
agccatctat	ggatcgcggtg	gcgcaaatgg	tgtgggtattg	attactacca	aacgtggtgc	780
aaaaggaaaa	gataa					795

<210> 4779

<211> 1260

<212> DNA

<213> B.fragilis

<400> 4779

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agccccgagc	ttagcaggta	tttcgacctc	ggtaccaatg	atgctctcca	ccgtttgcag	180
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cggcaccaac	gggacatcaa	aattcaacgt	atcataaacg	atctctttca	gcgtttccgc	1140
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<210> 4780

<211> 813

<212> DNA

<213> B.fragilis

<400> 4780

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tccatcgaca	tttggcaagc	aataaaactcc	accccgttct	ccagagcctg	ctgccgcagg	120
gattccagtg	agtcgatgcc	tttccggtgc	atgatgtatc	gcatcatctt	tccaccata	180
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aggacgaaag	tggcaagtgc	cttgtccaag	tcgtcactga	acataatcag	agttttacct	420
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gcatccaccc	ggattgtctt	aggatttgca	gccgttgtag	tttgggggtc	ctcagctgtc	720
acagaagggt	tcgccgggct	gtcttgcgca	gaaggcgtgt	cgtctgtttc	ttcattttcg	780
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<210> 4781

<211> 966

<212> DNA

<213> B.fragilis

<400> 4781

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agtccctttt	cgggagttac	cctccggtgc	gtgtttgccc	ccattgcttt	ctggatcatc	180
gggatgtttg	tcaagcccca	aattttccacc	cggaaagaaa	aaatattcct	ttttctcctg	240
ggagccttgg	gcatctatgg	tttcatgttt	ctttatctga	tggggttgag	taaaacgact	300
ccggtctcga	gttccatttt	caccagtttg	cagcctatct	gggtgtttgt	gatcgccgtg	360
gtcttcttca	aggagaagat	cagtgcgatg	aagatagccg	gtatctccct	cggactcggc	420
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tggtcgcaga	ccattgccat	cggcatgatc	tgcgtcagtg	tctatctggt	cgaagtggcc	900
gagacgaagg	agaaaccagt	cagtaattca	gataaaccaa	gtagtctccc	tccgcatgga	960
tcgtaa						966

<210> 4782

<211> 939

<212> DNA

<213> B.fragilis

<400> 4782

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ctattaaaag	aggagaatat	ctttgtgata	gataactccc	gcgcaacaca	acaagacatc	120
cgtccgctac	gaattgttat	cctcaacctg	atgccgttga	agattacgac	agaaacagac	180
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aagatgagag	aagacaggta	tgacggatat	attatcactg	gtgcaccggg	agagcaaattg	360
gattttgagg	aacgaacta	ttgggatgaa	ataaccggaga	tattcgactg	ggcacgtacc	420
catgtcacct	ccactactta	tatttgttgg	gcagcacagg	cgggactgta	tcatcattac	480
ggtatcccca	agtatgcttt	ggataagaaa	atggttcggca	ttttcaagca	tcgcacgctg	540
cttccgctgc	atcccactct	ccgtggcttc	gatgatgaat	tctatgtgcc	ccatagccgg	600
catacggaag	tgcgaaagga	agatatactg	aaagtaccgg	aattgacatt	actttccgag	660

tcggatgatt	cgggggtata	tatggtggt	gcccgtggcg	gacgtgagtt	ttttgttacc	720
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gggcttccca	tcgagattcc	ccgtaactat	tacgtgaatg	atgatccgga	caaaggaccg	840
ctgggtgcgtt	ggcgcgga	tgccaacctg	ttgttctcca	attggctgaa	ctatttcgtc	900
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<210> 4783

<211> 336

<212> DNA

<213> B.fragilis

<400> 4783

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aaaagaactc	ctaagagcaa	cagcattttc	gttctgggtc	ttgttttcat	ttcatacagt	180
attaaattaa	ttattttttat	agttttataa	aaggcctttc	tatataagct	aacacaccat	240
cgaaaagaag	gtatgagtgc	tattttttatt	tttctgcaaa	aaaagatgca	gggaaatgat	300
aggtcttgcc	cttatgtagt	tgtacatgcc	ttctaa			336

<210> 4784

<211> 444

<212> DNA

<213> B.fragilis

<400> 4784

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aagagtcattg	aaacggctca	ccactttgag	gcaggagtgg	cttatactgt	gcagtccgaa	120
acatttcctt	tgtctgttgc	atggtatacc	atgtttgcag	ggcaagataa	gaatgcggag	180
ggaggccaga	attattcgtc	ttatgttgaa	ttcaactatc	ccttcagagt	gagaatggtg	240
gatttaaacg	taacgtgtgg	aatgggttct	tatgccgtc	cccaatacaa	ttgtgatggg	300
tttgccgtaa	ccaatgttgc	tttgaaagga	actactcaga	tcagggttcac	tgataagttt	360
gctttgcctg	tatttgcaca	ggctgtttgg	aatccccgta	tggaagatgc	gcatttagtg	420
tttgggtatta	ctttaaagcc	atga				444

<210> 4785

<211> 261

<212> DNA

<213> B.fragilis

<400> 4785

aatcttaaaa	caataacggt	tatggagaaa	tatcttattc	acagtaatga	gctgcacctg	60
atcgatcaag	aaagaatcca	ccaggcagta	gagcagatgg	tagagtcatt	ggatatggcc	120
gccggatcta	cattcagttt	tgacctttac	aaagtgggtg	aaacctattt	caaggatctg	180
gataaacgga	gagagataaa	ccatctgtta	ggcatcacag	acaacacgta	tgatcctaca	240
gaagatttcg	gagtgtgtta	a				261

<210> 4786

<211> 1929

<212> DNA

<213> B.fragilis

<400> 4786

ttgcatgaaa	ctattaagat	gctacgcata	aaaagattag	atattttttat	aataaagagt	60
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ttgtggaagt	atttagacga	attggtggga	aaagggttgg	agatgagtgt	actggctcaa	180
ttcttctttt	attctgcgtt	gagctctgta	ccgatgtcac	tacccttggc	agtgttgttg	240
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gcgggggattt	cattacttaa	aatcatgcgc	ccgcttattg	ttctcgtctt	tgccatttgt	360
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ggctgttctt	tttatttccg	gatttgggct	tttcgtatac	gtctgaataa	agacatggag	1860
cggattatcg	cattgaaccg	ggatgtggaa	ttgacaataa	aagatattaa	taacgaaaac	1920
aagatataa						1929

<210> 4787

<211> 186

<212> DNA

<213> B.fragilis

<400> 4787

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gctcagaagc	ggtttttaac	gggtaaggaa	tcactctgaac	aggcaagtgc	caccttttca	180
ttttga						186

<210> 4788

<211> 225

<212> DNA

<213> B.fragilis

<400> 4788

aaactctatt	tttgtaccta	caaattagta	ctaataatta	aaatatcaaa	caaaatggct	60
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gctatctctg	aaggtgatat	ttactcaatt	gatcctgagc	agtgtacaga	ttgtggtact	180
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<210> 4789

<211> 204

<212> DNA

<213> B.fragilis

<400> 4789

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aaatgttcgg	cgattgtact	caacgcattg	acagggaaga	aagacaaagc	tgcaacaatg	120
aaaatgacgg	caaaagtcac	tactgcaaaa	gtcacagtat	ccgttttcaa	ggtaccggca	180
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<210> 4790
 <211> 1296
 <212> DNA
 <213> B.fragilis

<400> 4790
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<210> 4791
 <211> 2604
 <212> DNA
 <213> B.fragilis

<400> 4791
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<211> 651

<212> DNA

<213> B.fragilis

<400> 4792

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<210> 4793

<211> 1170

<212> DNA

<213> B.fragilis

<400> 4793

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<211> 576

<212> DNA

<213> B.fragilis

<400> 4794

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<210> 4795

<211> 195

<212> DNA

<213> B.fragilis

<400> 4795

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<210> 4796

<211> 189

<212> DNA

<213> B.fragilis

<400> 4796

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<211> 1593

<212> DNA

<213> B.fragilis

<400> 4797

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<210> 4798

<211> 252

<212> DNA

<213> B.fragilis

<400> 4798

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<212> DNA

<213> B.fragilis

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<211> 2064

<212> DNA

<213> B.fragilis

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<210> 4801

<211> 1722

<212> DNA

<213> B.fragilis

<400> 4801

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<211> 2865
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<213> B.fragilis
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<211> 2961

<212> DNA

<213> B.fragilis

<400> 4803

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<211> 1002

<212> DNA

<213> B.fragilis

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<212> DNA

<213> B.fragilis

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<211> 669

<212> DNA

<213> B.fragilis

<400> 4806

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<212> DNA

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<211> 357

<212> DNA

<213> B.fragilis

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<211> 1344

<212> DNA

<213> B.fragilis

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<211> 2397

<212> DNA

<213> B.fragilis

<400> 4812

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<210> 4813

<211> 627

<212> DNA

<213> B.fragilis

<400> 4813

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<211> 1011

<212> DNA

<213> B.fragilis

<400> 4814

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<210> 4815

<211> 1206

<212> DNA

<213> B.fragilis

<400> 4815

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<210> 4816

<211> 1584

<212> DNA

<213> B.fragilis

<400> 4816

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<211> 639

<212> DNA

<213> B.fragilis

<400> 4817

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<210> 4818

<211> 582

<212> DNA

<213> B.fragilis

<400> 4818

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 <211> 1461
 <212> DNA
 <213> B.fragilis

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 <211> 705
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<210> 4821
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 <212> DNA
 <213> B.fragilis

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<211> 1158

<212> DNA

<213> B.fragilis

<400> 4822

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<210> 4823

<211> 2511

<212> DNA

<213> B.fragilis

<400> 4823

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<211> 1023

<212> DNA

<213> B.fragilis

<400> 4824

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<210> 4825

<211> 1536

<212> DNA

<213> B.fragilis

<400> 4825

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<210> 4826

<211> 1356

<212> DNA

<213> B.fragilis

<400> 4826

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<210> 4827

<211> 1389

<212> DNA

<213> B.fragilis

<400> 4827

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<211> 918
 <212> DNA
 <213> B.fragilis

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<210> 4829
 <211> 1470
 <212> DNA
 <213> B.fragilis

<400> 4829
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<210> 4830
 <211> 1485
 <212> DNA
 <213> B.fragilis

<400> 4830

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<210> 4831

<211> 1974

<212> DNA

<213> B.fragilis

<400> 4831

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<210> 4832

<211> 1404

<212> DNA

<213> B.fragilis

<400> 4832

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<210> 4833

<211> 1248

<212> DNA

<213> B.fragilis

<400> 4833

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<210> 4834

<211> 2880

<212> DNA

<213> B.fragilis

<400> 4834

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<210> 4835

<211> 1836

<212> DNA

<213> B.fragilis

<400> 4835

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<210> 4836

<211> 2124

<212> DNA

<213> B.fragilis

<400> 4836

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<210> 4837

<211> 363

<212> DNA

<213> B.fragilis

<400> 4837

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actttctgct	cggcaggagc	tgccgccaaa	gagatcgatc	tgacggctgc	atacacaata	300
agtcgttccg	gtctgaccgg	attggttgcc	gacttggggg	ggggcaggac	agggagcacg	360
ttaa						363

<210> 4838

<211> 246

<212> DNA

<213> B.fragilis

<400> 4838

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ctgaagggtga	tatttactca	attgatcctg	agcagtgtac	agattgtggt	acttgcgag	120
atgtatgtcc	ttctgaagca	attcacccag	ctgaataata	caatcccca	caacaaagat	180
aaaggctgcc	ttcctaattg	aaagcagcct	ttattttattt	cttttcagac	gtttggcaaa	240
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<210> 4839

<211> 375

<212> DNA

<213> B.fragilis

<400> 4839

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------------	-----------	------------	------------	------------	------------	----

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gctgtagaag	aattacatcc	cgttcacacc	gcacagctaa	taacctattt	aaaactatca	300
ggaatcaaat	atggcctgct	tatcaatttt	aatgtaagaa	gcctcaaaga	aggcatcaga	360
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<210> 4840

<211> 336

<212> DNA

<213> B.fragilis

<400> 4840

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ctttggtcag	caattagcac	acctaccggt	ttggaggact	ggttcgcaga	caaagtagta	180
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gttgcgattc	gggcatattc	gttcattcgt	ttccactggc	ttgatgacga	aaatgaaagg	300
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<210> 4841

<211> 198

<212> DNA

<213> B.fragilis

<400> 4841

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gccgctccgg	caaaggtata	cttcaatact	gtaaacattc	cgaccgactt	cagtattcgg	180
ttacttggca	ccagatag					198

<210> 4842

<211> 639

<212> DNA

<213> B.fragilis

<400> 4842

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gccgtttact	acagctatgc	taccaacaag	gccaatgtgc	tgacttacia	tgtagacaag	600
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<210> 4843

<211> 219

<212> DNA

<213> B.fragilis

<400> 4843

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gaatgttggg	gagggtactc	ccgttgggtt	aaaaccaaga	ggagtttacc	cagagaggta	180
aggggcattg	gttttaaac	aacaccctt	accttttaa			219

<210> 4844
 <211> 183
 <212> DNA
 <213> B.fragilis

<400> 4844
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 gttcggctga gccttagggac cggactaacc ctgatccgat tagcggtgat caggaaacct 180
 tag 183

<210> 4845
 <211> 276
 <212> DNA
 <213> B.fragilis

<400> 4845
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 gcatctgaat tagctgtttt gttgccacca catgaaacca ttgcaaaaga aaatgccacc 180
 attgcagcag ctaaaaagaa ttttgtcttc atacttaaaa tatttgcttt aaacgtttat 240
 aaatactcga ttgcaaatat aaataaaaat aagtaa 276

<210> 4846
 <211> 1014
 <212> DNA
 <213> B.fragilis

<400> 4846
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<210> 4847
 <211> 1425
 <212> DNA
 <213> B.fragilis

<400> 4847
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 tttcgtccgg agaaagtata ttgtatgcc aaccataata cgcgactca cgatcaggat 240
 aaaccgattg aagatcctgt ttcaaagact cagggtggata cactgactaa gaatgcagct 300

gatttttggtt	tgactcatta	tggaaatgatg	gacaagcggga	atggtattat	ccatgtgggtt	360
ggtcgggagc	gaggacttac	tttacctggg	atgaccattg	tttgccggcga	ttcacatact	420
tccactcacg	gcgcgatggg	agcggttgct	tttgggtatcg	gtacaagtga	agtcgaaatg	480
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gaaggacgtc	agggaccggg	agcgcgtaca	ctattagcta	gtccgcttgt	ggcagctgcc	1380
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<210> 4848

<211> 606

<212> DNA

<213> B.fragilis

<400> 4848

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aaggaaggct	ttggagaaaa	cttatttcgg	gactggcggt	atgataagca	ggggaataaa	180
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<210> 4849

<211> 1074

<212> DNA

<213> B.fragilis

<400> 4849

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<210> 4850

<211> 1587

<212> DNA

<213> B.fragilis

<400> 4850

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<210> 4851

<211> 192

<212> DNA

<213> B.fragilis

<400> 4851

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<210> 4852

<211> 3096

<212> DNA

<213> B.fragilis

<400> 4852

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<210> 4853

<211> 183

<212> DNA

<213> B.fragilis

<400> 4853

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tag						183

<210> 4854
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 4854
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<210> 4855
 <211> 1503
 <212> DNA
 <213> B.fragilis

<400> 4855
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 ggggtagatg tgattgaagc aggttttctt atttccagtc cgggtgactt taattctgtg 180
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<210> 4856
 <211> 1539
 <212> DNA
 <213> B.fragilis

<400> 4856
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<210> 4857

<211> 288

<212> DNA

<213> B.fragilis

<400> 4857

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cagtcgtttc	ttctcaataa	ctgtcttgcg	agagcgtggg	cctacaaccc	cacacatgcc	180
gtaacatggg	tggtttgggc	taatcccggt	tcgctcgcca	ctactagggg	aatcattatt	240
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<210> 4858

<211> 657

<212> DNA

<213> B.fragilis

<400> 4858

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<210> 4859

<211> 810

<212> DNA

<213> B.fragilis

<400> 4859

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tacaacgaag	aagacaatat	ctactctttg	gaacagaaat	tgggagagtt	tttaccctaa	180

tctattttgta	cggcctgtgt	gttgtttgtg	aatgacgggt	cgcgtgacaa	cagtaagcag	240
cgtattatgg	aggtatgcgc	acgtaacaag	gatttctttt	atatggattt	agcaaaaaat	300
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<210> 4860

<211> 261

<212> DNA

<213> B.fragilis

<400> 4860

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ttgttagcct	taaaagctcc	gaaatgtact	ttctatgctg	cggatatagt	tctgaaagaa	180
cttaatcaat	taacaacaca	caagaggcct	ccattctgta	ctacctattt	tatactaatt	240
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<210> 4861

<211> 465

<212> DNA

<213> B.fragilis

<400> 4861

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ccgatcccat	cacggacggc	agcacctcac	gggcttcccg	ctccgccttt	tcgtccgcat	180
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<210> 4862

<211> 429

<212> DNA

<213> B.fragilis

<400> 4862

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cagcacttcg	agcaataaccg	ggaggagatc	gaggcggcac	acgccgggaa	actggagaac	420
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<210> 4863

<211> 510

<212> DNA

<213> B.fragilis

<400> 4863

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<210> 4864

<211> 387

<212> DNA

<213> B.fragilis

<400> 4864

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<210> 4865

<211> 2064

<212> DNA

<213> B.fragilis

<400> 4865

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<210> 4866

<211> 999

<212> DNA

<213> B.fragilis

<400> 4866

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<210> 4867

<211> 366

<212> DNA

<213> B.fragilis

<400> 4867

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gatattggag	aacagcccgg	cggtagcgtg	gaagccgagc	aatatcctat	cgaccacgcc	300
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<210> 4868

<211> 1296

<212> DNA

<213> B.fragilis

<400> 4868

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<210> 4869

<211> 978

<212> DNA

<213> B.fragilis

<400> 4869

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caaggtttgc	cccgcaacat	cagagggacg	ctctataatg	gcggcaatgt	cttgatgtta	180
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cccgcaaccg	agcaggaaaa	ttacaaggct	atcccgacga	tgaagtatta	caacgtcttc	420
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<210> 4870

<211> 360

<212> DNA

<213> B.fragilis

<400> 4870

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<210> 4871

<211> 663

<212> DNA

<213> B.fragilis

<400> 4871

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<210> 4872

<211> 1770

<212> DNA

<213> B.fragilis

<400> 4872

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<210> 4873

<211> 810

<212> DNA

<213> B.fragilis

<400> 4873

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<210> 4874

<211> 183

<212> DNA

<213> B.fragilis

<400> 4874

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<210> 4875

<211> 1203

<212> DNA

<213> B.fragilis

<400> 4875

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<210> 4876

<211> 2211

<212> DNA

<213> B.fragilis

<400> 4876

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<211> 2331

<212> DNA

<213> B.fragilis

<400> 4877

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 <211> 534
 <212> DNA
 <213> B.fragilis

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 <212> DNA
 <213> B.fragilis

<400> 4879						
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<211> 234

<212> DNA

<213> B.fragilis

<400> 4880

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gggatagttg	cgattaaggc	aagtatgggg	gcagggaatt	ttaaaaagca	aggctgggag	180
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<210> 4881

<211> 303

<212> DNA

<213> B.fragilis

<400> 4881

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aacctaatgg	aacgcattcc	catcctttac	cggaatcctt	taataatgaa	accatgcgga	180
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<210> 4882

<211> 561

<212> DNA

<213> B.fragilis

<400> 4882

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<210> 4883

<211> 396

<212> DNA

<213> B.fragilis

<400> 4883

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gaagcggaga	cctacctcgt	ccgggaaacg	gaaggggtgc	tggtcatcga	gacgggcttc	300
gccgtgatga	tggactatga	ccgggagaaa	gaccacatcc	ggctgtcgcc	gggagagag	360
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<210> 4884

<211> 465

<212> DNA

<213> B.fragilis

<400> 4884

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<210> 4885

<211> 861

<212> DNA

<213> B.fragilis

<400> 4885

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<210> 4886

<211> 636

<212> DNA

<213> B.fragilis

<400> 4886

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ctggatgcgg	tcaggagcga	caacaacccg	cagggtctca	tcacgcaggg	gttcgagatc	600
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<210> 4887

<211> 576

<212> DNA

<213> B.fragilis

<400> 4887

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<210> 4888

<211> 576

<212> DNA

<213> B.fragilis

<400> 4888

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<210> 4889

<211> 702
 <212> DNA
 <213> B.fragilis

<400> 4889
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 aactacaacc aatgcgtgcg tgcgctcaaa tccaatttct cggagaagaa agccctcgct 600
 ttctcttaca agctggagcg gcacaccctc gaactggtcg agttaagcaa gcggattttcc 660
 gcaactggtgg aggagttcca gagcaaatac cccgtccgat ga 702

<210> 4890
 <211> 222
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (201)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4890
 gtcagttgtg aaagtttgcg gctcaaccgt aaaattgcag ttgatactgt cagtcttgag 60
 tacagtagag gtgggcgga ttcgtggtgt agcgggtgaaa tgcttagata tcacgaagaa 120
 ctccgattgc gaaggcagct cactggactg caactgacac tgatgctcga aagtgtgggg 180
 tcttcaccgc ggggtggaag ngtcggtgct ataggttttc ta 222

<210> 4891
 <211> 330
 <212> DNA
 <213> B.fragilis

<400> 4891
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 ggcggacgtg acggtcgctc tcagggtgga acttcggaa ctgttctcgc ttacagggag 180
 cgagtacgag gcgatccact cggcttgga caaggcgggtg aaggtgctgc cggagtattc 240
 catcgtaac aagcaggact tcttcacga ggagaagtac cggccggaac cggacagga 300
 cgacctgagc ttcttgagcc ggagctttga 330

<210> 4892
 <211> 837
 <212> DNA
 <213> B.fragilis

<400> 4892
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 atcacggtgt tgggtggcggg ctacctgcac taccgcttg ggtgtccgct ggcggtgatc 180
 gactgcgact tccgcagta cagcctgtac gagatgcggg aacgggacag cggggcggtg 240
 ctgggagaac aatacctgaa acgggcggtc tacgaacaga tgcggcagcc gggcggtgcc 300
 gcctatccgg tgcgcaagtg ccgggtggag caagcccccg acacggcaag ggagctggcg 360

gcggaaggct	gctacgacct	gctcttcttc	gacctgccgg	gcacggtgaa	ctcggcgggc	420
atcctgcgca	cgatcgacaca	gatggactac	atcttcgccc	cggtagtgct	ggacaaggcg	480
gtattggaga	gcacgctctc	cttcctcgac	gtgctgcaac	ggatgatgct	gggcaaagag	540
acgagccgcc	tgaaggggct	ttaccttttc	tggaaaccaag	tcgataagcg	ggaaacgagc	600
gggctgtacg	agaagtacgg	gcaggtagtc	gccgacatga	ggctgccgat	gctgcaaacc	660
cgcatacccc	acacgaaacg	cttcgcgaag	gaggcggaca	gtacgggacg	gacgggtgttc	720
cgctccacgc	tgctggctcc	cgacaggcgg	atgctggcag	gcagcggcat	ccccgaactg	780
accctgtgaga	tagcaaccat	cctcaaactg	gaaggctatg	aagaagcagc	ggaatga	837

<210> 4893

<211> 642

<212> DNA

<213> B.fragilis

<400> 4893

aacagtaagg	acatgagaac	aataaaggca	atcattctgg	gcgtggcgtg	cctgacggca	60
ggtgcgccca	acgcccaatg	ggtcgtacac	gaccccgcca	atctggcgca	gggcatcatc	120
aacacagcta	aggagatcgt	ggagacctcc	gccaccgcac	agcacacgct	ggacggcttc	180
agggaaacgg	cgaagatatt	cgagcagggg	cggaaagtatt	acaatgcgct	aaaggcgggtg	240
catgacgtgg	tgaaggcgcg	agtgaagggtg	aagaagtcca	tcgggctggg	ggcggacatc	300
tcggaaatct	acgtgcgcaa	ctaccagaag	atgctgggcg	acccgaacta	cacgccggac	360
gagctggaaa	ccatctcggt	cgggtacgcc	aagctgttga	gcgagagtgc	ggacatcctg	420
caagatctga	agaacgtggg	gaacgtgacg	gggatgtcgc	tctcggatgc	cgaacggctg	480
gctatcatcg	accagagcta	caagcggctg	ctggagtacc	gcaacctcgt	gcagtattat	540
acggacaaga	acatctcggt	gagctacctg	cgggcgaaga	agaaaaagga	cgccgaccgg	600
gtgggtggctc	tctacgggga	tgcggaagac	cgttactggt	ga		642

<210> 4894

<211> 1080

<212> DNA

<213> B.fragilis

<400> 4894

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aaggcacgct	caaactggat	gacggcacgg	tgctgctgcc	caatgaccgc	taccgcgtgg	120
agaaagagac	gttcgggctc	tattacaccc	ggctgtcgga	cgagcagagc	agcttcaccc	180
tctgggtgga	ggactcggac	ggtcaggcgg	tcgagctgga	atacgacttc	aatgccggaca	240
acgacaagga	ggacggggat	ggaagtggaa	ctgggaaaga	gtgaggtgcc	ggctttggcg	300
gaattgaaag	acctgtgccg	gcacgagtgc	accgcagagc	ggtacgccga	taccgtcagg	360
gagttcggat	ggtcgctgga	acatgtgctg	gaggacatga	aaaccccgga	gatgtgccgc	420
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ccgttcgcag	aggtctgcat	ggaagccata	cgggactggg	acggcgaggg	cagagccgat	540
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cggctcgctg	aagcgtgcct	gacggcgtac	ctgaactatac	ccgggatgat	ccatgcccat	780
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aagcggatgg	cggcgaagtg	catcgagggtg	cccgatgggtt	tcctgaaaga	ccgtgagggtta	960
ctttcgaccg	gcagaaagag	acgttcgcga	tcgcccctct	cagccagcgg	caggagcaga	1020
ggcagcagga	acagcaagag	ccggaacgga	acgacgcacc	caagaggcgc	aacggaatga	1080

<210> 4895

<211> 1050

<212> DNA

<213> B.fragilis

<400> 4895

agagcggttt	gtcagcttgg	cggaggagta	tatgcggcgc	atgggcttcg	gcgaccagcc	60
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ctatatcgtc	tategccaca	acgacatcgg	gcgggagcac	ctgcacatcg	tttccgtccg	120
ggtggacgaa	accgggcggg	cgatttccga	cagctacgaa	cacgggagtt	cgatgaaggt	180
ctgccgggag	ctggaacggc	agttcgggtc	tgtcccggct	acgccaagc	agtgaagga	240
gggactaccc	ttgtcgccc	tcggttacgg	ggacgacaat	ctcaaggac	agttggcagg	300
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cacggccttga	cctattcggc	aactgacagg	gagggcaaca	aggtcggcaa	gcccttcaag	480
tcctccgtgt	tcggcaagga	ggcgggcatc	gctgccctcg	aaaggcggat	gcacaacgct	540
gccgcatggg	aaaagaccca	caaggaggto	gccgcgcgca	ccgccggaaa	ggttgcagcc	600
gccatgcaga	ccgcagggga	tgaccggggc	cagttcgagc	gggaactcat	gcggcagggg	660
atcggcggtg	tattccgtca	gaatgaagcc	gggcgcctct	atggggcgac	cttcatcgac	720
catgccgcca	aagccgtctt	caacggctcc	cgtctgggca	aggagttttc	cgcaggcggtg	780
ttcaacgacc	ttttcgccgg	gcaggaaggc	attcacctgc	cgcaaccctc	cgcgggagtg	840
gaacatccca	cccggcagca	ggagcatatc	ggcgcatccc	aatgggacgg	acataccggc	900
tatcgctcgt	accacaagga	cggcactacc	caaaacgtgg	cggcctcctt	caacctcttt	960
gccctcgtac	ccggcgaggc	gtccgggtgac	cagcccgtac	cgccgcagcg	caaaaagaaa	1020
aagaggcgca	agtacggcag	gcaacaataa				1050

<210> 4896

<211> 681

<212> DNA

<213> B.fragilis

<400> 4896						
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cgggagccag	cagcgtggag	cggaacacgc	tcctgccgct	actgtccgcc	tccttgccga	120
agcgtttcgt	gtcgggggatg	cggttttgca	gcacgcggag	cctcatgtcg	gcgactacct	180
gcccgtactt	ctcgtacagc	ccgctcgttt	cccgtttatc	gacttggttc	cagaaaaggt	240
aaagcccctt	caggcgggtc	gtctctttgc	ccagcatcat	ccgttgccag	acgtcgagga	300
aggagagcgt	gctctccaat	accgccttgt	ccgcactcac	cggggcgaag	atgtagtcca	360
tctgtgcgat	cgtgcgcagg	atgcccgccg	agttcacccg	gcccggcagg	tcgaagaaga	420
gcaggtcgta	gcagccttcc	gccgccagct	cccttgccgt	gtcgggggct	tgctccaccc	480
ggcacttgcg	caccggatag	gcggcacgcc	ccggctgccg	catctgttcg	taagccgccc	540
gtttcaggta	ttcgtttctc	agtaccgccc	ggctgtcccg	ttccgcctac	tcgtacaggg	600
tgtactgcgg	gaagtgcgag	tcgatcaccc	ccagcggaca	ccccaagcgg	tagtgcaggt	660
agcccgcac	caacaccgtg	a				681

<210> 4897

<211> 351

<212> DNA

<213> B.fragilis

<400> 4897						
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ggagaaggtg	cgctcgctgg	aggacttcgc	cttctccgaa	gagagcgata	tggacggggg	120
ggaaatggaa	ctgccggaca	gcgagccgga	acgggaaccg	ttcagggact	attcggacaa	180
tggcgggcgg	agccgttctt	ccgttaccgc	ctaccgggac	atcaaccgtc	agctcggctc	240
gttctacgag	gaaccgaagg	tggacgggga	aaaggaggag	ctgaaaaggc	aggtggagga	300
gttgaccgcc	aagctggaag	aaaggggaac	gcaggcgggc	ggaatcgatg	a	351

<210> 4898

<211> 306

<212> DNA

<213> B.fragilis

<400> 4898						
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ccgccacggc	gggctgtctt	ggactgttgt	cgttctgcac	ggctgcgcgg	tccttcccgct	120
tctgtcccat	gtacttggcg	gcaagctcgt	agctcttctc	catcagcgcc	acctgatcat	180

cgattccgcc	cgcttgcct	tccctttctt	ccagcttggc	ggtcaactcc	tccacctgcc	240
ttttcagctc	ctccttttcc	ccgtccacct	tcggttcctc	gtagaacgag	ccgagctgac	300
ggttga						306

<210> 4899

<211> 1791

<212> DNA

<213> B.fragilis

<400> 4899

caaagaaacc	gatttcccga	ccggaagaaa	ttatcaaaaa	gaacaagaat	aaacaatcaa	60
cttaaaaaca	aacggattat	gaagacaaaa	gcaaatcaat	cagcagcaga	gagaaacatc	120
acgatggtag	cattggcaaa	cattcagccg	agcggtttca	acccacgcaa	gcgtttcgat	180
gaaacgagcc	tttacgagct	tgccgagagc	atcaagcggc	aggggtgtgt	gcagcccac	240
accgtgcgcc	ccgttgacgg	gacagaccgt	tacgggattg	ttttcgggga	acgccgttac	300
cgtgcgtccg	tcattgcggg	cagggacgaa	attcccgcga	tcgtttccga	gttgtcggac	360
gaggaagccg	aggaaatggc	gattactgag	aacttgacgc	gcaaggacgt	gacacccgtg	420
gaggaagccg	cagcctatca	gcggcttacc	gagagcggac	gccacaccgt	gcagaccttg	480
gcggtactct	tcggaaagaa	cgagaactac	atccgcacac	ggctgaaatt	caccgccctt	540
atccccgaaa	tcgccgccct	cttggatgcg	gatgaaatca	ccatcagcgt	ggcgggtgaa	600
atctgccgat	acggggagga	cattcagcgt	gaggtgtacg	agaaacattt	gcaggacgag	660
ggaacgtata	acagttggcg	gggactgaaa	gccgccgatg	ttgcaaggcg	cattgaacag	720
aacttcacca	ccgacctgca	atactaccac	ttcgacaagg	ccgagtgcgc	cacgtgcgca	780
cacaacacca	ataacttgct	gttgttccat	gacggcgggt	gcgggcattg	cgccaaccgc	840
acgtgtcttg	ccgagatgaa	cgccctcttc	cttatggagc	gagctgtgca	aatcatgcgg	900
aaccagccgg	aggtgtcgct	ctgccgtgac	tgctacaccg	ccaacgagac	ggtagtagaa	960
cggttaaccg	cttcgggcta	cgaggtggag	acccttgaca	ggtacaccgc	ctttccaagc	1020
tgccccaaag	aacccaaagc	cgaaaatttc	aacgaccccg	aacgctacgg	ggaagcccgc	1080
accgcctacg	agcagcaatg	ggcggactac	atggagcagg	aggaggaaat	caccgcagg	1140
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tacgtggaga	acgtgacaga	gaccgagaca	gcggacggaa	cgcccgacc	cgcaccgctc	1260
tctcccgtgg	agaaattgga	gaagcaggac	aagcgcaata	aggaaatcgc	actcgaacgc	1320
acggtggagg	acaccaagaa	acagattctc	gaagccgaca	tcacggggcg	caagttcagt	1380
gccgatgaag	acacgatgct	gtacttcttc	cttctgtcct	cgctccggaa	ggaacacttc	1440
gcagccgtgg	ggattgcgga	agacaagccg	tatatcacgg	acgaggacaa	gatggggatt	1500
atcggaiaacc	tcacggtaaa	gatgaagacc	atcatccgca	gggacttcct	tgtagccaac	1560
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cacatgccgg	aggaaactcg	caacatcgaa	agggagtaca	acggggtgta	cgagaaacgt	1680
caccagcgca	tcgagggaaa	gaaagccgtc	ctattagtgc	aggaaacggc	aagggagcgc	1740
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<210> 4900

<211> 237

<212> DNA

<213> B.fragilis

<400> 4900

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ctcgggtggga	ccttggcggg	aattgaacgg	gaatcagaca	ggaatcaaac	aaaaattgaa	120
cggaagaccg	cgtaaacatt	gttaatgcag	ttggggagag	atttatttca	ggggcgggaa	180
gaacaaagct	ttggcttcga	aaagacttgt	tatttggaia	taaaaggctt	gatttaa	237

<210> 4901

<211> 1374

<212> DNA

<213> B.fragilis

<400> 4901

tggaagaaca	gacccaagaa	aaagcaacgg	ccaacgcagc	acgtgacggg	ggcgggatgcc	60
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ccaacccccgg	agacgggggaa	cggaaagaag	gaggacaagg	gcggcggggaa	aaaggagaag	120
aagacagcca	agccgctcac	gccgaaacag	ttgcagcaac	ggaagaagct	gatggtatat	180
ccgctgatgg	gcttgctggt	cctcgggctcg	atgtgggtga	tattcgacc	ttcggaggag	240
cgggacgtga	accggggacac	cgtggggggcg	ttcaacgccg	acatccccct	gccggagaat	300
gacgggatca	tccggcgacaa	gcggaaaagcc	tacgagcagg	cgcaggcgga	gaaacagcag	360
gcggagaagg	tgcgctcgct	ggaggacttc	gccttctccg	aagagagcga	tatggacggg	420
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tcgttctacg	aggaaccgaa	ggtggacggg	gaaaaggagg	agctgaaaag	gcaggtggag	600
gagttgaccg	ccaagctgga	agaaagggaa	cggcaggcg	gcggaatcga	tgatcagggtg	660
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ggcgcagccg	tgcagaacga	caacagtcca	agacagcccg	ccgtggcggt	gcaggtggca	780
cgggagcgga	cggatatcg	gctgcaacag	cccctgagcg	atgcggagtt	catgcggcg	840
tacagccagc	cgaggaacta	cggcttcaac	acggcggtag	gcagcgggta	cactatgggg	900
aagaacacga	tacgggcgtg	catccacgga	gatcagacga	ttatggacgg	acagacggtg	960
aagctcaggc	tgctcgaacc	gctgcaagcg	ggaaaccttg	tgattccgca	gaacacgctc	1020
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taccggggga	acttgctgcc	cgtggagctg	gcggtgtatg	acagtgcagg	gcagaaaggc	1140
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atcacccgtg	ggctgatgca	gggcgggcagc	cagtaccttg	ccaagaagtt	ccgcacggta	1320
aaggtgcacc	tgaaagcggg	gtatgagctg	atgcttttacg	caaacaaca	atag	1374

<210> 4902

<211> 723

<212> DNA

<213> B.fragilis

<400> 4902

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aataccggga	ggagatcgag	gcggcatacg	ccgggaaact	ggagaacctc	ttttaaaaag	120
gaaggaggaa	acggcatgat	actgaaatta	tcgctcaccg	tcctgctgct	ctattacctc	180
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gacgaagaca	cggacggaac	gggaaaggaa	ccggggcaac	cggtgagcc	gtacacggtc	300
atgggagaaa	gcacctacct	gcccttcgga	gcggaggacg	gggagggaagc	ggtagccgga	360
gccgtggacg	aactcgcagc	ggaggacgac	ggggcggaact	actccgacat	cgagccggag	420
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gagcgggaag	cccgtgaggt	gctgccgtcc	gtgatgggat	cggacatctg	ggaggcgatg	660
ctggacgagt	tcgagggcgc	acgtaagcgt	gtcgcccggc	tgatggacaa	ccataatggt	720
taa						723

<210> 4903

<211> 585

<212> DNA

<213> B.fragilis

<400> 4903

gcgatgaaaa	ggttactgtt	cattatcctg	cttttcgggg	tgtgcctgca	tgtgaaccgg	60
gcacacgccc	aacggtgcct	gcccggaatg	aggggcatac	agctcacggg	cgggctgtcg	120
gacaacatgc	gctggaaaaa	cggcgacggc	ttcgggtacc	acgccgggat	agcggtgagc	180
acctacacga	agaacgccc	ccattgggtg	gtcgggtgtg	aatacttgga	gaagcgttac	240
ggctacccgg	actgcctcta	tcgggcgagc	caattcacgg	gcgagggcgg	ctattacctg	300
aacttccttt	cogaccggaa	gaagacgttc	ttcgccgcac	tgggactgtc	cgcccttgcc	360
gggtacgaga	cgggtgaactg	gggcgagagc	ctgctgcggg	acggctcccg	gctcacggat	420
gaggacaatt	tcattctacg	gggtgcgctc	acgctggagc	tgtccgccta	cgtgacggac	480
aagattgtct	tgctggtaaa	cggctgcctc	cgggtgctgt	tcggcgccga	ctgcgggaaa	540
ttccacacgc	aggctggcgt	gggaatccgc	ttcatgattc	gataa		585

<210> 4904
 <211> 468
 <212> DNA
 <213> B.fragilis

<400> 4904
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 gagacgatgc cgcgtccgaa ggagctgaaa gtgaacgaga cggcggagat acgggtgcgag 180
 ctgaaacggg aaggacgctg ggaggacgcc cggtagacga tccgctgggtt cctcttcgac 240
 ggggaaggca cgctcaaaact ggatgacggc acgggtgctgc tgcccaatga ccgctacccg 300
 ctggagaaag agacgttccg gctctattac acccgctgtg cggacgagca gacgagcttc 360
 accgtctggg tggaggactc ggacggtcag gcggtcgagc tgggaatacga cttcaatgcg 420
 gacaacgaca aggaggacgg ggatggaagt ggaactggga aagagtga 468

<210> 4905
 <211> 306
 <212> DNA
 <213> B.fragilis

<400> 4905
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 tattttgaac cggggacgaa actgatttac gccatcgggtg cgggtggtcgg cttgatcgga 180
 ggggtgaaag tatatgggaa gttcagctcc ggcgaccccg acacgtcgaa gacggcggcg 240
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 ctgtaa 306

<210> 4906
 <211> 756
 <212> DNA
 <213> B.fragilis

<400> 4906
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 aaccgatttt taaactttca aattttcaaa cttatgcgaa ccgtacagag aacctatata 180
 ctattcggga ttgcggaact ggaggacgaa gcccgtaaa aagcctatac cgactggctt 240
 gccaaaggaa acgattaccc gtatgcttcc gagaactgcg acacgctcga agccttctgc 300
 aaccttttcc gcattgcctg caccaactac tgttacgaca gttgcacata cgcttaccgt 360
 ttccataccg gacacgagga ggagaccgaa aggccttcga gcgtccgctt gctggcttac 420
 ctctataaca acttccatgc ggagctgtac aagcccaagg tctattggac gaaagaccgc 480
 aagaaaagac gcaggagccg tatctccgtc acttgccaat gccccttcac gggggttgtg 540
 tcggacgaaa tcactcttgca gccctcatg gacttcatgc gctcgcccga cacacggaat 600
 ttcaaggaaac tcatgcgtga ctgtctggaa aacttcttcc gctcgtgccg tgacgattgc 660
 gagtattgcg agagcgagga atatttcacg gacgagagcc acaagaataa ttgggagtac 720
 cttatcgacg ggacactttt catagaaacg gcatga 756

<210> 4907
 <211> 333
 <212> DNA
 <213> B.fragilis

<400> 4907
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 gaggctctgg aagagggcat gaggtatatt gatacggtag cggcgcattt ccgtccggcg 120
 atgaacggcg aggtctatct caggggtgag gatgtgtgca gaatgttaca tatcacgtca 180
 aggacgttgc agggctaccg cacacaacgg ttgatcccgat acatatcgct gccaggcaag 240

acgctttacc	gccagtcgga	tctgctgcgt	atgctggaag	aaaattacgt	ggacatgaga	300
caaaagcgca	aacgggggaa	aagtccaaca	taa			333

<210> 4908

<211> 1224

<212> DNA

<213> B.fragilis

<400> 4908

acccggagga	gatgcgcac	ggcgacgaca	tcctctgcct	gcacaccctc	tcggacacgg	60
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cggactgccg	gctgtcgttc	cgccggcccc	ggtgggcttg	ctgctggact	gcaaccactg	180
ctacaaccag	tacatcttca	tcgacgacca	cggggagaac	ctgaaacgct	tcgagcagac	240
cgcccggaa	atgcactcgc	tctcccgtca	ctcccgtctc	aaccagatca	acaaggcttg	300
gatcgaggaa	tacctgaacg	aggcgcactc	gaaagggtcg	acctcggtgc	gctgccactg	360
caacgtgatg	gcatggagcg	acgacaggga	ggaactcagg	cgcatcaaga	acgaggtggg	420
cagccagctc	gccctgatgg	agtgcgaagc	gaggcacaac	acggtggacg	tgcccacgct	480
cttttgggcg	gcgataccgg	gcaacgaggg	ggacttcccc	ttcgaggaga	gcttctacac	540
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ccacatcggt	ctgatcgaca	cgggcaactc	gtaccaaggg	ctgtgcgagc	tgatacaccg	840
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caacccttcc	ttcacggacg	actacaagtt	cagcgtggag	aagaaggaca	gcatcaagac	960
gttgctgctg	gcgctgtgga	agggcgagga	cgagaaaatc	acgaagacgg	agagcggcga	1020
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ctcgttcgac	accttctacg	agtacatgct	gaacgattac	cggaaggagc	tggtcgcaag	1140
ggacatcaag	gtgagccgga	aggacttcaa	catcgacaac	ttcctgacca	cactcaggca	1200
gtattacaag	ggcggacgct	atga				1224

<210> 4909

<211> 405

<212> DNA

<213> B.fragilis

<400> 4909

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gggcgatcag	gaagaacgtc	cgtatcgtgt	cgatcaccag	cgcagccgac	tggaacagca	120
gttcgagcag	ttcttggaac	cacagccgga	tgttccgctt	catgttgtat	tcggtccggt	180
cgatgtacat	caccggcatc	gtcttcaagt	ccttgggcga	ccagcccagc	tcgtcgagct	240
tcttgtcgaa	gtcctccttg	ctcgccagat	atgccttctc	cgggtcacgg	cggaacgcct	300
ccctctccag	cgtctccttc	tgctcccggg	atcggttcat	gtcgaagggtc	tgtgattcga	360
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<210> 4910

<211> 1431

<212> DNA

<213> B.fragilis

<400> 4910

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cttgcccggc	aggctctccg	tgtccgagag	ggtgtgcagg	cagaggatgt	cgtcgccgat	180
gcgcactctc	tccgggttca	actggatgtc	cttcagcacc	gtcgtgtcgt	gctgcgagag	240
cgagaggtac	ttctccacga	tgcccggcgc	cgtctccgct	ccagtgatct	cgctccgtcgt	300
gaggcggtgc	agcgttaacaa	aaccgctgtc	gttcattgatc	ttctcgaaact	gcccgaacggc	360
ttcgaggaac	ctcgttaaccg	tctcccggtc	ctctatctcc	ttggggacaa	gcctgccctt	420
gcagaggggtg	gagaacgtgc	tttcctgacg	gctccgcacc	ttcgtgggtct	ttgtcaggaa	480

caggtagcag	gtgtgcgaga	ggaacgggag	ttcgttgaag	tgcctctcaa	agctccggct	540
caggaagctc	aggtcgtccc	tgctcgtttc	cggccgggtac	ttctcctcga	tgaagaagtc	600
ctgcttgtgt	acgatggaat	actccggcag	caccttcacc	gccttgtgcc	aagccgagtg	660
gatcgctcgt	tactcgctcc	ctgtaacgga	gaacagttcc	ggaagtcca	ccctgaaggc	720
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gccttcatca	gcccgtgctg	gccgtaccgg	gcgttcagcc	ggaaggtcag	ccataccagc	960
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ggctccgaac	cagctcgccg	ccgtcttcga	cgtgtcgggg	tcgccggagc	tgaacttccc	1260
atatactttc	accctccga	tcaagccgac	caccgcaccg	atggcgtaaa	tcagtttcgt	1320
cccggttca	aaatacgagg	tgaccatctg	cgtggcttcg	gtgataccg	cctgcccggt	1380
tccttgcgcc	attgcgcccc	cggcagcgag	tatgcaggcc	gccgtgaata	a	1431

<210> 4911

<211> 861

<212> DNA

<213> B.fragilis

<400> 4911

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cacgaactac	aaccaatgcg	tgcgtgcgct	caaataccaat	ttctcggaga	agaaaagccct	120
cgctttcctc	tacaagctgg	agcggcacac	cctcgaactg	gtcgagttaa	gcaagcggat	180
ttccgcactg	gtggaggagt	tccagagcaa	ataccccgtc	cgatgatagc	caagatctcg	240
cacggcagca	gcctgtacgg	ggtgcttgcc	tacaaccagt	tgaagggtga	cgaacggcac	300
gccgacgtgc	ttttcaccag	ccggattatc	gagccgcagg	gcgataaacc	ctacacgata	360
gggcatcttt	cccgtcgttt	cggtgactac	ctcacagcca	accgcaagac	cgagaagccc	420
gtcctgcaca	tctccctcaa	tcccgacccg	aaggattgct	tgagtgaaga	gcgggtttgtc	480
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gaacggcagt	tcggtcttgt	cccggctacg	cccaagcagt	ggaaggaggg	actacccttg	720
tcgcccgtcg	gttacgggga	cgacaatctc	aagggaacagt	tggcaggagt	catccgcccg	780
ctcgcccggg	agtggcggtt	ccgtacattg	ggcgaatacc	gtgccgtgct	ttcccttacc	840
gcatacacgt	ggacgaggta	a				861

<210> 4912

<211> 198

<212> DNA

<213> B.fragilis

<400> 4912

atcatggaag	gaaagaagtt	taaacacaag	tatctgccgt	acctcacttg	cgtggtcgtg	60
gcagccaccc	gaaaagggta	caagggtttt	gaaacccaag	ttttggggcg	gcgcaggaag	120
cccaaaacaa	agacagccta	ctactacgac	attgattttg	ataaagagcg	tggtttgtgg	180
caggaagaag	gcaagtaa					198

<210> 4913

<211> 210

<212> DNA

<213> B.fragilis

<400> 4913

tggggcacgg	ggcaaatttc	gtcacgggt	tgcccttgt	caaagccatc	tctttcgaaa	60
acggactgga	atagttatct	tacttttgcg	gtaatttcac	ctatcagggt	cgtgatcttc	120
tcaatggaat	acttttctat	caatctcctg	tttgccgctt	ctgcctttag	tctttcattg	180

attaattttta gttgtggcaa atctgattga

210

<210> 4914

<211> 2055

<212> DNA

<213> B.fragilis

<400> 4914

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gggaacgctc	cgacaatcat	ctggaaacac	gaattgaccg	taataactta	tttcttaaaa	120
gttatcagaa	ttatgcctct	tttccgtaat	tttgaacact	ctaatagaaca	tggttatgat	180
agaaacatac	tcaccttttt	aaatgaatat	gcggaaatat	ccgatccgca	atatgccatc	240
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ggtttgacca	ctaccagca	aatcacagaa	caagtcaaca	aggaaatatc	cccgtggctg	420
tacagcaagg	gaatgaaact	tgccaagaat	atattaaaaag	ccgcctcgaa	aatcgctttg	480
aaatatgaca	tgcacgggtga	cggaaaggat	gaagggagtg	taacctgtga	cttggactcc	540
attttgttgt	tgaaagaaga	aaattccgaa	ataaaaggaa	acaagattct	gatttttgac	600
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aattttgtcg	ccgtttactg	cgagtataag	ggtgggaata	ctcggatcgg	aagcctattc	1080
aacagcctgt	atgacatgtt	cccggataaa	gagaaagatg	aggagcgtga	aaaaatcctc	1140
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gtttcaaaaa	gtattttggg	attgtccaac	gaatcacgta	acacctttct	gcatttttta	1860
cagttccggt	ataaatatag	ctcttggggc	agtgaatatg	aacacttgag	caaatattgt	1920
caatcagatt	tgccacaact	aaaattaatc	aatgaaagac	taaaggcaga	agcggcaaac	1980
aggagattga	tagaaaagta	ttccattgag	aagatcacga	acctgataga	tgaaattacc	2040
gcaaaaagtaa	aataa					2055

<210> 4915

<211> 399

<212> DNA

<213> B.fragilis

<400> 4915

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cttgttcaag	tcaccatcgt	ggaattgttt	cttttttcgc	tggtgcataa	cgcattggcg	180
cttaaaaagg	gctggcggct	caaataccgc	tacgttctga	tgtcgggaaa	tgcggacgcc	240
aagacacttg	acaggctgga	gaactgcttc	gagtggaaaca	gggacaggaa	gctaatatgg	300
aagatcagga	aagaggtgga	ggacttcgag	cgttggacgg	aaaagaaaagt	ggcagaaatg	360
ctgcgtgcta	aaagacaaca	gccgggagtg	gggaaataa			399

<210> 4916

<211> 507
 <212> DNA
 <213> B.fragilis

<400> 4916
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 aagagagtta gaatccactc ttccaaggag tcttacgaca tcctcaagac tttctacgag 180
 gactgtatgc agcaccacga ggagtgcgtg gcgatgtacc tgaacggcgc aggcagactg 240
 ctgggctgtt cgtgcgtctc acgcagcggc atgaacagta cgggtggtga catacgcac 300
 gtcctccaga cggctctcgt ctctcatgcc tcgggaatca tcctctcgca caaccacct 360
 tccggctcga ccgtggcgag cagcccgac aacaacctga ccagccagtt gaagaaaggc 420
 tgcgaggcaa tcggcataca gcttttagac cacatcatac tgaccgagga cgcctacct 480
 agctacatgg acgaggggat gctttaa 507

<210> 4917
 <211> 1014
 <212> DNA
 <213> B.fragilis

<400> 4917
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 tatcaggaca tgatgccgct ctgcgagaag ctgacggggg tagccaaggg aattgccggg 120
 ctgggtgcgc tgttctacgt agccgccaaag gtgtggcagg cgctcgcccg tgccgaacct 180
 atcgacgtgt acccgctgct ccgcccgttc gccatcgggc tgtgcatcct cttcttcccc 240
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 atgctcgaat cacagacctt cgacatgaac cgataccggg agcagaagga gacgctggag 360
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 atcgaccgga cgggaatacaa catgaagcgg aacatccggc tgtggttcca agaactgctc 540
 gaactgctgt tccagtcggc tgcgctgggtg atcgacacga tacggacgtt cttcctgac 600
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 ggggtgagcc aagccaaccg tgcgatgaac caaacgcaa acaaggctcg caacgtcgcc 960
 gcagcgggtg cgggtgccgc cgtggggaac atcgccggaa aaatcatcaa gtag 1014

<210> 4918
 <211> 1329
 <212> DNA
 <213> B.fragilis

<400> 4918
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 acctcgttct acatcaagag atcggcagtg agaaaccggg acgaaaaagc ccccatcatg 120
 gtgaagatct ccattgatgg ggatgacaaa gtattgggaa ccaaactatt cgttacgccg 180
 gatttatggg agaatggtaa ggcaaaaggc aagtctgccg aggcgacaga gataaacggg 240
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 gattttgtca ccgccgaaaa gctgcgtaac gcctttcttg gtatcgggtg gatggaaaac 360
 tgtatcctga aagatttcga gaacatgaac cggaatttg aggcgatggt ggagaaagga 420
 cagcgtgcca aatccactta caacaagtac ttggcgtgtg acaaccattt tgccaccttc 480
 ctttgggaga agaagaaacg aaccgatatg gcttacaagg aactgacaaa ggagattatc 540
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catgacaaga	tccagcgc	cat	ggacttcgac	ggcgaggatt	ggatcataac	ccgacgcacc	900
aagacccgtg	tgtcgcag	caa	cgttccctt	atggaaatag	ccaaggaact	gatagaaagg	960
tacaagggac	ttgccggagg	cgatttcgta	tttcccatgc	cctctaacgg	tacatgcaac		1020
aagcacctca	aacagattgc	caaagcctgc	ggcatcagca	aggagatcgg	attccacctg		1080
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aagatggtaa	gttcagattt	ccgtgcaatc	tccggcaacc	tcgccgccat	gcagcggagc		1260
gtactggaga	aaagggacag	gaagcaagg	aggaaaaagg	tgcaccggtc	cctccgggaa		1320
acggcttga							1329

<210> 4919

<211> 315

<212> DNA

<213> B.fragilis

<400> 4919

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ggtggcgcat	gccccaaacc	cggagacggg	gaacggaaaag	aaggaggaca	agggcgcgcg	120
gaaaaaggag	aagaagacag	ccaagccgct	cacgccgaaa	cagttgcagc	aacggaagaa	180
gctgatggta	tatccgctga	tgggcttgc	gttcctcggc	tcgatgtggc	tgatattcgc	240
accttcggag	gagcgggacg	tgaaccggga	caccgtgggg	gcgttcaacg	ccgacatccc	300
cctgccggag	aatga					315

<210> 4920

<211> 339

<212> DNA

<213> B.fragilis

<400> 4920

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attgaaaaga	agacctttga	ggagatgaag	gagcggttcg	gctgcttctc	acggcacgtg	120
aaggaacttt	gcgcccgtta	ccgcccggcc	gggaagatga	actggatgga	cggggcgagc	180
gtgtgcgaga	aactggggat	cagtaaaccg	acgttgcaga	cctaccgtga	ccggggactg	240
ctgccgtaca	gccagatcaa	ccataagatt	tactaccgga	cggaggacgt	ggagggtattc	300
gtggaatcca	tgagccggga	aataatggag	gacgagtga			339

<210> 4921

<211> 1005

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (840)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4921

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agttcgctcg	tttttcaagg	tgccgggaat	gttcgggaatt	atgtagacca	cgggaaatat	180
ctgggcgatt	tgagtctgat	ttatgaagta	agagggaaga	gttatgccgt	ttctttggct	240
gatattactc	ctctggtctt	gtcgaatact	ccggataaga	tacagatatt	ctggcagctt	300
cctttcgatg	tgcgtcttta	ccaaactttt	actattaaag	gagaagaagt	agactgggag	360
attgattttt	ttaatcgcag	tcattcatcc	gtgaagggtga	cggatatgtg	gttcgctctg	420
cctgtggggc	ctttgggatga	gtctattcag	gcacatcaga	acctgaaccg	tcattttctct	480
ctgaatggaa	atgcctcctt	cttttattgg	actccgctga	cagggcaagg	tgatattctg	540
ctgatgacta	tgcataaggg	aactgcgata	gaatatgcta	cacaagatgg	caagtactat	600
ctgcattcaa	tgaatgctgt	agatcgtacc	aatgatagct	ggagattacc	gtctacctca	660
aaaaacgtac	agccttacga	gcattacatg	acaggtttca	acttcacact	cactggaaaat	720

catgaagagg	taaaaacgaa	gattttatgat	aaacacggag	tggttgtgaa	agttgctccc	780
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gctgaattag	tggcagaata	tccagaggag	atacagataa	ccagtcttgg	acaaaaggaa	900
ggagataaat	atatctataa	gttccgtttc	tcccgttttg	gagaaaacct	gattacgggt	960
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<210> 4922

<211> 930

<212> DNA

<213> B.fragilis

<400> 4922

agacataata	tccagttagt	gccctacaaa	aaaggagact	ttccggaggc	actgatggaa	60
atgagctata	tagggacgaa	tcaattgaag	tttacgggtga	cagatcggcg	gattccttcg	120
ggcatccgga	tgaagccgaa	tattcataatc	tttggaggag	ttgccaatca	accgggtaat	180
acaattatcg	agagtcgctt	tgtagcgtgt	gatgctgac	gtgcaatacg	taaatactct	240
aatgatgcat	gggtagctgc	ttatttttggt	ttacataaccg	aacagttgga	agactttcag	300
ggatatagtg	caggatacaa	atattatacg	ttccaagatg	aacgttcgta	tggagcgttt	360
cagactaacg	atccattatc	ccgccgtcct	acggaaggat	tttataaaact	tggtgatatg	420
tacaaccggg	atacttactt	gcagcctttt	ttggatcatg	gagaaaaaat	cattccttcgc	480
caagtggata	tgtacgtgaa	tggtcgttcg	actttttgtg	cagctgatga	ttcgccttat	540
aaatatgatt	tggacgggaga	cggagttattg	gaatcgtatg	aatgtgaact	cgatcctgct	600
accgggtcttc	cgggtacatga	agccgactat	acaaagtaca	aagggttttca	gggagatggt	660
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gccggtgact	ttacaattac	cgctgttgct	accaatgtag	gtgataaaga	ttataaagga	840
atagattata	gcgaggaaaag	aagtaactct	ttggatgact	atagtcataa	gagagcactt	900
agcagtgtga	aggtttcggg	aaaaccgtag				930

<210> 4923

<211> 522

<212> DNA

<213> B.fragilis

<400> 4923

gaagcagtgt	tttctataacc	ggtggatacg	acatttatga	ggcttcgtca	atgggagtg	60
tattgtcaga	aacgggctga	cagttgtctg	acagagaata	attatcaggg	agctttatct	120
tggctggatt	ccgctcgtat	ccaagtggaa	cattacggac	gtccttatta	tatatggga	180
cgcggggacg	tatattattc	catccatcaa	tatgattctg	cccgtcgtta	ttttagtatg	240
gcagtcatt	ccattcatcc	acatattgct	atcgaagctt	ggaggaaact	tgcagaactg	300
gaacttatgg	aaggaaatga	gaagcaagg	ttctattcta	cgcagaaggc	agatgcactt	360
ttccgggtgg	agataggcca	tgtgcagagt	gataacagtg	aagctctata	tcagggaagag	420
aggttgaaaa	acgagttaaa	ccaattgaag	attgccaaac	agaataggga	aattgccatg	480
tcttcaccac	ggggctggaa	ggatccgcga	tggcggtcac	cc		522

<210> 4924

<211> 1278

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (17)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4924

gcactttttt	ttcatntnta	taccaaataat	atgttgttta	ttccaagaaa	aatttgtgtcc	60
tttgcaaaaag	aaactaaaaac	gccaaacact	atgtacggta	aaatgaaaga	acacctcagc	120
aatacgattg	ctgaaatcaa	agaagcaggc	ctctacaaag	aggaacgctt	aatcgaaagt	180

gcacaacaag	ctgctatcac	cgtaaaggc	aaagaagtgc	tgaatttctg	tgccaacaac	240
taccttggat	tgtctaacca	tccccgcctg	atcgaagggtg	caaagaagat	gatggaccgt	300
cgtggatacg	gtatgtcttc	tgtacgtttc	atctgcggaa	ctcaagatat	acataaggag	360
ctggaagccg	caatttcaga	ctatttcaag	accgaagaca	caattttgta	cgcagcctgc	420
tttgacgcta	acggcggtgt	attcgaaccg	ttgttcaccg	acgaagatgc	catcatctcc	480
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cgttatgcca	atgcagacat	ggccgacctg	gaacgtttgcc	tgcaggaagc	acaggctcaa	600
cgtttccgca	tcatcgtcac	cgacggtgta	ttctcaatgg	acggaaacgt	tgctccgatg	660
gacaaaatct	gtgacctggc	cgaaaaatac	gatgccctgg	tgatggtaga	cgaatctcac	720
tcagccggtg	tggttgggtgc	aaccggtcat	ggagtaagcg	aacagtacaa	cacttacgga	780
cgtgtagaca	tctacaccgg	tactctgggc	aaagcttttg	gcggtgcttt	gggaggattc	840
acaaccggcc	gcaaagagat	catcgacctg	cttcgccagc	gcagccgtcc	gtacctgttc	900
tccaactcac	tcgctccggg	cattatcggt	gccagcctcg	aagtattcaa	gatgctgaaa	960
gaaagcaacg	aaatccatga	caaactggta	gacaacgtaa	actacttccg	cgacaagatg	1020
actgcagccg	gattcgatat	caagccgact	cagagtgccta	tctgtgccgt	gatgctttac	1080
gatgccaaac	tgtcacagat	ctatgcagcc	cgcattgcagg	aagaagggtat	ctacgtaaca	1140
ggcttctact	atccggtagt	tccgaaagac	caggcacgta	tccgtgtaca	gatttcagcc	1200
ggtcacgaaa	aagaacacct	cgataaatgt	atcgctgcatt	tcatcaaagt	aggtaaagaa	1260
ttaggtgtac	tgaagtaa					1278

<210> 4925

<211> 735

<212> DNA

<213> B.fragilis

<400> 4925

aagagtttcg	aaaaccgggtt	ggcatgtggg	gatatcgaca	cattgctaata	tattaaaatg	60
aaaacaataa	tggcgggagt	caccgtcctg	gtgttggttcg	cttcatgcgg	caacagtaata	120
aagactgacg	ctgacccctt	tgcattctatt	acacattctgg	tagattcggc	aatgggtgaac	180
aaaaccgatt	ctattgacag	agaaaagact	tccgacgaac	ctaaaccgat	tgaggctgac	240
gaatcgtttg	acgactttat	ctacaacttt	gcttctgatg	acgctctgca	aaggcagcgc	300
gtggtgtttc	cgttgcctta	ctacaacgga	gaacgggctt	tgaaaatcga	caggaagtac	360
tggaagcatg	atgacttggt	tgccaaacaa	agttattata	ccttactctt	cgaccgggaa	420
gaggatatgg	atctggtagg	agacacttca	ctcacatccg	ttcagggtgga	atggattttc	480
gtgaaaaaac	gaatgggtgaa	gaaatattat	tttgaaaagaa	ttaaaggggc	gtggatgctc	540
gaagcaatca	atctgcgtcc	gattgaggaa	aacgagaacg	aagactttgt	tgaattcttc	600
ggtcattttg	cgacggatag	tattctccag	agccggcgaa	tccgcccaacc	gcttgtcttt	660
gtgacaaccg	atccggatga	tgacttctcg	ttactcgaaa	ctacacttga	cttgaaccaa	720
tggttttgccc	tttaa					735

<210> 4926

<211> 1050

<212> DNA

<213> B.fragilis

<400> 4926

tgtatgaaaa	gaatgatcgt	ttataaaagt	tgctcgatg	taatcatggc	tctgctttgt	60
acggcatgtg	ccgctggctc	tcccgaagaa	gatattggagg	atcgggtacg	gattgatccc	120
gttgccgggtg	gatattatcc	ttcaattttct	ccttcggccc	agaccctgtg	ggcgacaccg	180
gatggcgaaa	cgttgaaaga	tagaccgatt	tttctgctgg	aagacgggag	tacgatacgc	240
ctgggtggat	atgatgatgc	caagaatcta	ttggaggagt	attccaaagc	ttatctggta	300
cgtaacgccg	gtacgtcagg	cagcagtcgt	ctctatccct	gtgaggtaga	cgacaacgga	360
gcggtaatat	cttcaagcag	cactcctctt	tatatgaagg	cgggtactta	ttacttcaga	420
atcctgtcac	ctgccaaggc	tttaaactca	aagggttttg	tcaatatcgg	taacggagaa	480
tacctgcttg	cgaccgacga	ccggtatacg	caaacagcca	tgacggcagt	gaccattacg	540
aaaattgatg	aaggggggtac	attgaacaat	gtccagacac	tgtatctgcc	ccccatcatc	600
aaccagacag	cgggatgca	gtttactgtc	agggcgggtg	aaggggtgca	caccttgagag	660
atgcttgccg	aaggaatcga	aatcagcggg	attcagcagc	cactggacaa	tacgaccagc	720
ttcgactggg	taaatggaga	tgtgctgcct	gtgaaagtgg	gggatcagag	tgcattcggtg	780

cgtatcacac	aggccacccg	aaatgccgat	aacagcctgg	tggcgcatat	cggcgatttg	840
cccacagacg	cacgttctca	ctctatcagt	gtgttgctga	acctgaaggt	gaacggtaac	900
cctactcagt	atcagatgtt	gtccaccggg	ttgtatctga	cagcagggcg	ttcgtacaac	960
tatacggcta	cggtgaagat	cagtaatggc	gtcactgtgc	tgacctggca	aaaccgttcg	1020
tggacggaga	atgtagtaat	ggataaataa				1050

<210> 4927

<211> 420

<212> DNA

<213> B.fragilis

<400> 4927

aaaaatacga	taacaatgga	agaacttaca	ctcacgacac	ccgcgctgct	attttcagcc	60
gtttcactta	ttcttttggc	atacaccaac	cgctttctct	cgtatgcca	attggtccga	120
attcttcgtg	accgctatat	ggaagatcct	tccgacatca	atgttgcca	aattgagaat	180
ctgcgcaaac	gcctcaacct	gacccgtatg	atgcagggat	tcggcattgc	cagtctattc	240
ttctgcgtag	tcaccatgtt	tcttatctac	atcggattgc	tcctgctctc	aatctatatc	300
ttcgggttgg	cattgctact	gctgatcgct	tctttggggg	tttccctccg	cgagatacac	360
atatccaccc	gtgccttggg	catctacctg	agtacgatgg	aaggcaagct	gaagcattaa	420

<210> 4928

<211> 930

<212> DNA

<213> B.fragilis

<400> 4928

aataaacaga	ttagagtaat	gaataataat	gatcccatga	aaagattcgg	atatatcggt	60
tttagtatatt	gcctgtttgc	gctgagtggc	tgcacatccc	atgaacagat	ggatcaggag	120
gagggaatag	tgaagtgctc	gatgggactt	actgccgctt	ctttcaccga	tgatgatgcg	180
acaacccgtg	cggagcagcc	gatggcacct	gattatgaaa	acctgattag	taattttgtg	240
attctgcagt	ttgaccgtga	aggtatcctg	acaggcagcg	aacataaagt	gctgccca	300
ccggtgctca	acaccacgct	tgaaggaatt	gcgttgagga	ccgggcgcgg	tacggtttgt	360
gtggtgggca	atctggcgga	tggagagatt	gccgcgtggc	ctgataactt	gagtggcttc	420
aagagtctgg	tgggtggatat	gggatggctg	aaagaacgga	atacggaccg	gaatgtgtgt	480
ctcttcgggt	attacgaagg	cgagattgct	gccggcacca	cagctgtgaa	tgtagtattg	540
ggacgtctgg	tatgcaggct	caatatagct	gttttcggcca	agacggcagg	gatattcagc	600
aacgtgagga	tccagttgca	gaatgcgcag	accaaaggct	atltgttccc	ttcggatgta	660
tatctgtcac	cgggaaggagg	cgggaattat	acggaagagg	ttgtcatcgg	tgccgacaaa	720
gtattgggga	cagccccctt	ttaccgctac	tattatatgg	ctgagaatgt	gactgaggga	780
accgactccg	gtgaacgcac	ccggctccaa	atcaaagcaa	agaaaggagg	ggccgaatat	840
acaaaagcca	ttgacttggg	cagaagtgc	atccatgatt	attccctccg	ccgaaacaat	900
aactatacat	tcaacatcgt	tttagagtaa				930

<210> 4929

<211> 207

<212> DNA

<213> B.fragilis

<400> 4929

aattgcggct	tccagctcct	tatgtatata	ttgagttccg	cagatgaaac	gtacagaaga	60
cataccgtat	ccacgacggg	ccatcatctt	ctttgcacct	tcgatcaggc	ggggatgggt	120
agacaatcca	aggtagtgtg	tggcacagaa	attcagcact	tctttgcctt	taacgggtgat	180
agcagcttgt	tgtgcacttt	cgattaa				207

<210> 4930

<211> 975

<212> DNA

<213> B.fragilis

<213> B.fragilis

<400> 4932

tcgtctttgt	cccgatgcct	ggaatggaaa	gctgaacagc	atgaagatac	gacaagcagt	60
ccaggaagtg	atztatcagt	cgttatatat	accggaatag	tggaagtga	tggcttttta	120
caatataaaa	tgaagaaga	atattttatt	gctgggttag	ttgtatcagc	gcttttggga	180
gtaggagcga	aagttcctgc	ttctatggat	gcccctgtcc	gtgaggtttt	tcatactcct	240
cccggtatgt	ctgctcctat	agaacctttg	ttgctttatc	aggcttccca	ggatgaaaag	300
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gcgggttcata	cttataaagt	cggtggatta	cttttttccg	gcggaaagat	acagaatcag	480
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tgtcgtgaga	tgggagtgca	agtcaatttt	gctccgggtg	cagatgtgaa	tatcaatccg	720
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ccgggacatg	gtgatacggg	cgtggattct	cataaggcac	tgctgtgttt	accatttacg	900
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gacgctgtat	tgggaagcgt	ggaaaaagga	gaacttcccg	aagaagaaat	taatgcaaaa	1260
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gagggagcct	atcccgggtg	tcagggttctg	gtgatgaagg	atggcaaagc	tttgatgac	2040
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aataaagaga	acctgaccat	tcgtgaattg	ctcatgcata	agtctggctt	accttccggt	2280
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ggcttgattt	atgtatttct	tagtaatcgt	acctatcccc	atgcttgggt	gaacaaatta	3120
tctaaacttg	agatttaggga	aaaaattcaa	gaaacgattt	acgaagcgat	gaaagaaaag	3180
taa						3183

<210> 4933

<211> 729
 <212> DNA
 <213> B.fragilis

<400> 4933
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 ctccatgtac tcaaaggcat caatctcgac atcgagcggg gtgaattcgt ttccatcatg 120
 ggagcatcag gttccggcaa gtctacttta ctcaatatac taggtatatt ggataattac 180
 gataacggag agtattacct caacaacgtg ctgattaagg acctgagcga aactaaatcc 240
 gcggaatacc gcaaccggat gatcgggttc atcttccagt cattcaacct gatttcattt 300
 aaaaatgcag tggaaaacgt cgcactgcct ctgttttacc agggagtaag ccggaaaaaa 360
 cgtaatgccc tggccatgga gtacctcgac aagctgggac tcaaggattg ggcacatcac 420
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 gtagaggtga tgcaaatact gaaagacctg cacaagaccg gaatgaccat tgtcgtagtc 600
 acccacgaaa gtggagttgc caatcagaca gataaaatta tccacatcaa ggatggtata 660
 atcgaacgga ttgaagagaa cctgaatcat gatgcctcac cattcggcaa ggatggatac 720
 atgaaataa 729

<210> 4934
 <211> 447
 <212> DNA
 <213> B.fragilis

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 atgccggagg ccatgtttct aatgatggat aatctgttta ccggtatcca tgtattgatc 60
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 gtgaccgtga aggaacggac ccccgaaata ggtaatccgc gtgccatcgg tgcctgccc 180
 aaagacattt tacaacagat tttatcagaa agtatggat tgactaccat tgcaggcatg 240
 gccggcatct cttttggtgt actgatacct caattaatgg aaataggcgt caactccggt 300
 aaggaccatt attcccactt ccagggtgtct tttggtagtg ctatcggaac ctgcctgtta 360
 ctggtgacgc tgggactact cgcgggactg gcacccgctt acagggcaat ggctatccga 420
 ccgatagaag ctatcaggga tgaataa 447

<210> 4935
 <211> 786
 <212> DNA
 <213> B.fragilis

<400> 4935
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<210> 4936
 <211> 3024
 <212> DNA
 <213> B.fragilis

<400> 4936

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<210> 4937

<211> 1401

<212> DNA

<213> B. fragilis

<400> 4937

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aatcgccgaa	ccctcaagga	cttaggaatg	gtggaagagc	cgtatggcaa	gaaaactctt	180
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<210> 4938

<211> 933

<212> DNA

<213> B.fragilis

<400> 4938

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ctccggaaaag	agagtatcag	cgagtggaa	cgggcattat	ggatgcaagg	aatcctttat	720
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gacggtgtag	aacacgtatt	aaaggtgctt	caactgaaat	gtaaattcac	ctatcaacgg	900
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<210> 4939

<211> 3258

<212> DNA

<213> B.fragilis

<400> 4939

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tcggggagtat	tcgccggcaa	tgogaactct	caggaaacaa	aggtatctat	ctcgaaaaac	180
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tattccgaga	aggaggtaga	tgtaaatcaa	cgcaaaaccg	tcaatgtaag	tcagcaacgg	300
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<211> 1032

<212> DNA

<213> B.fragilis

<400> 4940

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<210> 4941

<211> 1107

<212> DNA

<213> B.fragilis

<400> 4941

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<210> 4942

<211> 1353

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (249)

<223> Identity of nucleotide sequences at the above locations are unknown.

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tgtatcgatt	atgccattga	gcataatatc	aatgtgcaac	aaacggcaaa	ctcggccgaa	180
cagagtaaag	tggagggtgaa	taccgccaaa	tgggcacgct	taccaaacct	tagcggcagt	240

gcttcgcana	attggagttg	gggacgtaca	gcatcgccgg	tagataaacac	ctataacgat	300
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gaaaagttcg	acaatggaaa	agcgacctcg	gtcagagtaca	atgaatccaa	actaaatctg	1260
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<210> 4943

<211> 360

<212> DNA

<213> B.fragilis

<400> 4943

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agcttcaaag	caggagacac	tgtaacagta	gcatatcgta	ttatcgagg	taacaaagag	120
cgtgtacagt	tgtaccgcgg	tgttgttatt	aaaattgcag	gtcacggaga	aaagaaacgt	180
tttactgtac	gtaaaatgtc	aggaaccgta	ggcgtagaaa	gaattttccc	gatcgaatca	240
ccggctatcg	acagcattga	agtgaacaag	gttggttaaag	tacgtcgcgc	taaactgtac	300
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<210> 4944

<211> 349

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (329), (331), (333), (336)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4944

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ctctgccgga	cggccgacaa	acgaatacta	tatgccgaac	aaaaatacgg	attatctatc	180
tgctatgagg	acctgcgaat	gaaaggatta	aacgaaatcg	aactgaaaaa	tctctctata	240
gttccccgca	accgggatac	ccttctcacc	ctgcatactt	tgaacatgca	cctcaacttt	300
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<210> 4945

<211> 801

<212> DNA

<213> B.fragilis

<400> 4945

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gccaaagtag	aggggaaggat	gattgacatt	gacgccaaat	gggacaccca	tcccgatgca	180
gatgccgtgg	caatattaaa	gccttataaa	gaaaaaatag	acaatatgat	gtatgaggtg	240
attggcagca	gcgagcagaa	gatggacaaa	ggacatcccc	agagcttgct	ttctaattctt	300
gtagcgggaag	tattgcgtca	ggctgcaacc	aaggtgcagg	acaagccggc	agacatggga	360
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ctgaaagcat	tgctcacaag	cattgcatcg	ttgaaaggag	aaggggtgag	cggtatccgg	540
atggaaatta	ccaaggatgg	aaaattactg	aatgctacgg	tgggcggcca	gccgatcgat	600
gacaataagc	tgtataccgt	ggcgacaatc	gattatctgg	ctgacggtaa	tggaaagtatg	660
gaggctttct	tgcaggctga	tgatcgtgtg	tgtcccagg	gagccacgtt	acgcgggctt	720
tttcttgatt	acgtgagaca	gcagactgct	gccggaaaga	agatcacttc	ggcactggat	780
ggcagaatca	ctgtgaaata	a				801

<210> 4946

<211> 2175

<212> DNA

<213> B.fragilis

<400> 4946

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aatcaatcac	taagacaagt	ttattatggc	ccacgcctgg	cagacaccga	tgtattacag	180
aaacagggca	ataactttcc	ggcatattcg	acttatggaa	tgggagaaca	aaacgaagtg	240
gcccttcacg	cagtacatgc	agacggtaat	acctctacac	tactgaactt	tgaaaacgtg	300
aaacaagagt	ctccggaacc	cggcataaca	ctgactacga	tttctactgaa	agaccgccta	360
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tatccgggaa	gccgtgctgc	aacagggtca	gccaacggac	aatctttcag	tggcgatttc	2100
ctgatgaatc	aaggcttgcc	tattggttta	tccgggtgatt	acagtagcgc	tgtcattgag	2160
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<210> 4947

<211> 3087

<212> DNA

<213> B.fragilis

<400> 4947

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tcttttagaga	cttatgagaa	ccagtcctgta	gctgctgttc	agcaagcaag	gaagattacc	120
ggtacactga	ccgatgctgt	cggtgaacct	attattgggtg	ctactgtttt	agaaaaagga	180
aacccttcca	atgggtacgat	taccgatatc	aatggtaa	tctctctttc	ggtccatcct	240
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caaacctcac	tgaaagtgg	tatgatggat	gatacccagg	cgctggaaga	agtagtggt	360
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ccgggactgt	ttgtatctaa	tggaggtaat	gctcccggaa	ccagtaagtc	gttccagatt	540
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cgtcagagcg	acaaataact	gtctgatgct	tcttatctcc	gtattaagaa	catcactttg	3060
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<210> 4948

<211> 609

<212> DNA
<213> B.fragilis

<400> 4948

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gaacctgatt	ttataggtga	ggtgttagtg	ttaaatccgg	ataacagcac	gactccgctg	180
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attaatatct	ttcagtttga	aacgggtaag	aaagtacgta	aggccgagtt	atcttctttg	420
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tatggagaaa	gttcttatct	gatcacattg	aaagaaaagc	cggtgggcga	atatgggata	540
acggttcgta	atcctaattc	tttggtatgaa	aaaaatatca	ttgtggcttc	gtttggaatc	600
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<210> 4949

<211> 1617

<212> DNA

<213> B.fragilis

<400> 4949

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caaaatgcc	aagtcggaac	cggacatgcc	ggcacacggg	gttggaacagg	ctatagctgg	960
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ggaaccgacc	cggaaacttta	cactcgctgg	acacagttcg	gattgctgaa	ttcttcactc	1560
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<210> 4950

<211> 1311

<212> DNA

<213> B.fragilis

<400> 4950

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ttcgccgtag	catggggcat	cttcatgctg	atagtgtctgt	tgggagccgg	aaacggactg	180

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aaggacctgg	atgccaccat	ggagcacttc	agcgacaaca	tcacagtggt	aggtgccagc	360
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<210> 4951

<211> 843

<212> DNA

<213> B.fragilis

<400> 4951

agcagattga	ttatgagagt	agatatggat	acgtgagagg	aaatcctcgt	cacgataaca	60
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gtggccctga	tgggaggcgg	acaaggaatg	caggagatga	tgcaagccga	atttgaaggc	180
ttcgcaacca	actcgggttt	catggcctca	caaaagacag	gagaggctta	caagggattc	240
cgcaaaggac	gctattggga	tattgaaaac	gcagatattg	aacgaatccg	caaaaaagta	300
aaagacatcg	atgtaatcac	tccatcgata	gccgctggg	gatcgacagc	catttatgga	360
gagaaaaagt	acgattgcag	cgtgaaagg	ctttatccgg	actatgcaaa	gattgaaaac	420
caggatatgg	cttacggaag	atztatcaac	gacgtagacg	tacgcgaggg	acgcaaagtg	480
tgcgttatcg	gcaaacgtgt	ttacgagagc	cttttcaacc	cgggcgaaga	tccttgtggg	540
aaatatgtac	gggtagacgg	catttattat	caggatgatg	gcattgtgtg	gtccgaagga	600
aacatgaaca	tccaggggccg	ggcttcggaa	gccgttgtgc	tacctttcag	tacgatgcag	660
caagcctaca	acatgggaaa	acgtatcgac	gtgatatgct	ataccgtgaa	accgggggaa	720
aaggtaaagc	accttgaacc	ggagatagaa	gccatcctta	aagaggccca	ttatatatcg	780
ccgatgaca	aacaggcagt	tatgaaactg	aatgccggag	gccatgttct	caatgatgga	840
taa						843

<210> 4952

<211> 552

<212> DNA

<213> B.fragilis

<400> 4952

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tttccattgt	tcacaaagg	aggttgtcct	ctaccgatgc	agccttatac	ggaacgaatg	180
tgttccaccc	cgctcactga	attgatcgta	cgttgttatc	cgggcaaaaga	aggagcaaac	240
aatacttata	tcctgtacga	agacgacgga	ctgacccaag	actacctaca	agggaagtat	300
gccaccacac	gcctcaacta	tcagaaatca	gggggacaga	cgatcatcac	tgtatctccg	360
gtagaaggga	cttatgaagg	acagccccga	aaacgtgcct	accggatcga	actgccgggg	420
attccggtac	aggcccggtg	gtcggtaaac	ggcaaaaagg	ctcgaacaac	tcccaatcaa	480
gaattaaacg	gagttatcgt	acctattaag	gtaatggata	tccataaacc	gattgtaatc	540
aaaatacaat	aa					552

<210> 4953
 <211> 351
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (274)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4953
 ccttggcgga ttctacgacg gaaccgaccc ggaactttac actcgctgga cacagttcgg 60
 attgctgaat tcttcactcc gcatccactc ggtgtacgac gaaaactcga ccgccgtccc 120
 tggctctggg gcgtagaagc agaaaaggca atgcaccgga tttaccacct acgctctcaa 180
 ctgatgccct acatctactc ttccgtccgc caatgccata cagatatgtt gccacttaac 240
 cggggaatgt acattgaata tccggacgaa gaanaagcct atcaatatcc gggacaattt 300
 ctcttcgggtg acctcttggt gggtgctccc atcaccgcca agggagaatg a 351

<210> 4954
 <211> 876
 <212> DNA
 <213> B.fragilis

<400> 4954
 attatgatat tcccaatcaa taaaaaacat acgttctttt ccaaggaaaa gacacttcta 60
 actttctttt ttattctctt tatttctttt tctgcatttg ggcagcagga taaaaagctg 120
 attctctctg agaccagtga tgtgcatagc cgcttggaac ctatcaatca ggaagggtgac 180
 cggaattatg ataaaggcgg attcgtacgt cgtgccacat ttgtgaagga gttccgcaaa 240
 gagcatcctg atatgttatt gttcgattgc ggagacattt cgcaggggac accttattat 300
 aatatgttcc aggggtgaagt cgaagtgaag atgatgaacg aaatgaagta tgatgccatg 360
 actatcggtg atcacgaatt tgattttgat ctggataata tggcccgttt attccggatg 420
 gctgattttc cggtggtttg cgctaattat gatgtaagtg ctacggtgct taaagacttg 480
 gtgaaaccgt atgtcgtctt tgaaagagac ggtgtcaaga tcggagtttt gggattgggt 540
 tgccagcttg aaggcatggt acaagccaat aagtgtgtag gagtggttta caatgatccg 600
 gtaactgtag cgaacgaagt ggctgctctc ctgaaagaaa aagagggatg tgacgtagtg 660
 gtttgtcttt ctcatctggg tgtgcagtat gacgagaatc agttgatccc taaaacacgt 720
 aatatcgatg ttgttctcgg aggccattcg catacattca tgaaagggtc caagactctc 780
 ctcaatatgg atggcaagaa tgtgtcgtcg atgcataccg gtaagagtgg tatctatgta 840
 gggcagatgg acttaacact tgaaaaaaag aaataa 876

<210> 4955
 <211> 345
 <212> DNA
 <213> B.fragilis

<400> 4955
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 ggaaccggtg aaccgattat cggagggagt gtacttggtta aaggttcatc gatcgggtaca 180
 gtgacagatg ttgatggcaa ttacacttta tctaattgtt ctgcagacgg agttctggag 240
 ttttcttaca tcggcatgaa gaaacaggat gtaaaagtaa gcggtaaaac tgttattaat 300
 gttgtgcttc aagaagatac ccagatactg gacgaagttag gctag 345

<210> 4956
 <211> 357
 <212> DNA
 <213> B.fragilis

<400> 4956

gccggcgagc	cggcgttttg	tgatgaaaat	ccaatagatt	gccattttga	tgtgaaaagc	60
tatcctgccc	gaacaacggg	gcataacaac	gatacgaata	tcattttacct	gataattctgc	120
atgaaagggc	atgcacggat	taccagcaca	ttcttccacg	atgaaatttt	gtgtgcggga	180
gaggtgatgt	tcgttcctcg	cgggagtgaa	tacagcggcg	tggcggttaag	tgatgttacg	240
ctgctgggtc	ataaattcaa	taacacagtc	tgccagacag	aaaactgtat	cctttcctat	300
ctttattcgc	acaagaatat	tgattccaaa	atttattgtt	gccaaaagaag	aacgtaa	357

<210> 4957

<211> 906

<212> DNA

<213> B.fragilis

<400> 4957

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gttatcatat	ttattatggt	ttttctgttg	gtaatgagag	cttgctcgca	gaagcagccg	120
attcaggctg	ttgtaactcc	gtctgacctt	gtcgtggggg	aagaaatatt	tttttccgat	180
tccacgtcgg	gagcgagaat	ctgggtactg	gagttcggaa	acaacgagac	atccacacaa	240
cgtagcggac	accatcgggt	caagcaaaaa	ggggtgtaca	aaatacgact	gaccgtcaac	300
ggaaatctgg	aacgctactt	tgatgtgagg	gtaaaagaga	agaccaatac	ggaagacctg	360
catctgggtc	atatcatagc	tccaagga	gctattcagg	gagaaaatat	catcttccgt	420
ggcgaaggac	acgacgaaca	atggcgctgg	gagttcggag	agacggggat	gattgattcc	480
cgtgaaaaaa	cggctcttta	tgcttatacc	gaacccggag	agtacgaagt	attgcttaat	540
acggagaata	ccgggtatcc	catcagacac	cgataaaca	ttctgcccta	ctattcggag	600
aatgattcta	ccgatgtaat	ggtgctcatc	ggtttagaca	tcaaagagaa	ggtgcagAAC	660
attgcagacg	gtaaaccctt	taatgtaaac	tacaactatg	tcgtggacaa	gtattttaat	720
aataaccgga	acacgctggt	tgttatcaac	aacaataaat	ataacgactt	ttattcttat	780
tgccaaggac	tgcaccatat	cggcagaaaa	gaaacgatta	tccagaatgt	catcgtagag	840
acggaggatg	aagagagcgg	atacatcacc	caactaacgg	ttatgcaaat	cgaaaaaaag	900
aatga						906

<210> 4958

<211> 936

<212> DNA

<213> B.fragilis

<400> 4958

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gaaggagttg	ttgatgagtt	gtcgttgaat	aaacagacag	agaaaagact	tcttttgtca	180
ggtggaaacg	ggaaatatat	agttaatgtg	gagaacgcac	aaatagccac	tgctgatata	240
agtatggata	cccttaaagt	aaaaggtttg	ttggaagggtg	aaacgtttgc	taccatcatt	300
tctcatgata	agcgcataag	gttgaagatc	aacgtagtct	ttccggagct	cggaataagt	360
cattccgtag	tgcagcttct	tccccgattt	agaagtaaat	tcataagtat	ttccggagga	420
ggagaattga	ctaagctgga	agaggacgat	cccgcagata	ttatggatat	gaaatgggac	480
ggttctacgg	ggatgctgga	gatatatccc	aaatatgagg	gagaagcccc	ggttatcgct	540
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ctggaaattc	cggggtggta	tagcaccac	tcaagttcat	actatctgat	ccaaaataat	660
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cagggtgact	ctatcgattt	aaatatactt	cgccatggat	ccttgaaacc	gcagataaca	840
gaaggtatac	ataggctgta	tgtagaagaa	gtgcgtgagt	cggaagtcat	gttacgggga	900
agaggtttca	aatttttgct	cccttatgaa	aagtga			936

<210> 4959

<211> 846

<212> DNA

<213> B.fragilis

<400> 4959

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atcgctcggtt	tatcggtt	tgctcccgt	caccgcttca	ctcaactgcg	gaagcttct	120
cgtgaatatt	ctgacaatta	ttccatagag	gggataaagg	caccagaag	cgctgccac	180
cgcaaaccgt	ggattgtcta	ttcggacagg	gtggagaatg	ccgcctatgt	caatccggga	240
ggcagggttaa	agtctgccga	ggtaggatta	ctggatacgt	tcttagttat	caagaccaa	300
ggagattatt	tgcggttgat	taaatataac	cccacaaata	tcaagcacia	ccgtatgacc	360
caacgcaaaa	aggcggaata	tgtgggctgg	atgcaccgct	ccgactgat	actttcacct	420
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ggcgtatccg	aactacagaa	tcaaaccggc	gtgggtgggt	tccacgctat	tatatatgcg	600
ctcaagcatt	ctgttgacaa	acgcagtgt	ttgggtatcga	aaactccctc	tctctctgcc	660
gataaaatcg	gtgagcaggt	gatcggtatg	gttcccgcgt	tcatgctcca	agaaatcgga	720
catcaggtgt	tcacaggaac	ggcggttttc	agagtgccga	ctttgcaaaa	gacgctgaaa	780
tatgctccta	tgatatatcc	ttatcatacc	gattccacct	gctcggtcgt	cagcggaaca	840
ttataa						846

<210> 4960

<211> 1557

<212> DNA

<213> B.fragilis

<400> 4960

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accggtggaa	atcaaatcaa	gcaagaattg	aagcgaataa	atatcctgtt	cgcaatggaa	120
cagtcttccc	ggctaccgga	acaatacccg	atgctgttga	atgccataca	gaatctggga	180
ccgttttttg	ccggttccgg	tgaatcgttc	tcctatcaat	tcggagcggc	ggtagctacc	240
ccccggggca	tggagacaat	tcctctgact	gctgactacg	agatacttat	agaccgattg	300
gtaaaaatgg	cgtcatatgt	agctgacact	gaaaatactc	ctttgcctgc	atggaaggca	360
atgagaagtg	cattggaact	tatcggaat	acacctgaag	cggttaatct	gattatatca	420
gtcggtgaaa	cgggagaaca	gcaagagaat	gctccctctt	ccattgtgaa	aaccctgaat	480
gaaaagaact	gtcgcctgct	cggttggcaa	ctgtacgcct	cgaacgacga	taagtacaat	540
aactatgtgc	ttcaactttc	aaacatgatt	gaacattacg	ccgagtaccg	cactaaaaac	600
aagcgggaata	tgattctgt	tgccgaccag	ttttgccgca	gcaacctgct	gcgggaagca	660
ggcccgaatt	ttctcatgct	cgactatccc	tatgccagca	tgacacaagg	cggtttcctg	720
tttccggaga	aagggtgaaac	cctgccaatg	gaattgtttg	ccggagcggg	ggattccatc	780
gtaacgcaga	taaaagcggga	tcaccaactg	ctctctgaaa	gcatagaccg	tgcatttgcc	840
acggttggca	atggttaaaga	ccgttttagac	agtcttctga	ttgcaacct	tcactctgct	900
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tataggaaaa	cagaaagaat	taccgttccg	gacagtttga	tgcgctatta	cctgctactc	1020
tccgaccggg	aactgaaaca	gacaatagaa	cgcttggaaa	cactctgtgc	catagaagtg	1080
gatgtgaagg	acatgaataa	gccaaagaaa	ggtaaagtta	aacagttgtg	ccgctattta	1140
agggaaaagg	tacgccccga	taaggtagaa	actctcggcg	catcaccgcg	aaatcccgaa	1200
agcaaaagcag	atacgggtgt	tgtatctacc	ggaaaaatac	gccgccacct	ttatcgcttt	1260
tatatgtcag	aactgcgcaa	ctgccggatc	tgcaaaaata	agcgaaagga	aatcaggcga	1320
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gatgacataa	cgggtgaagga	gctcaaaaag	aaaaaacagt	taaccgacaa	agagttggac	1440
ggacttattc	aatattttta	agagaggaaa	gaaaatatgg	ctaagaaata	cggagaagaa	1500
aaaataacga	tgggaaggaca	aagctattac	tacatagctt	cagaactgtt	accgtag	1557

<210> 4961

<211> 540

<212> DNA

<213> B.fragilis

<400> 4961

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gaacgcttta	tccgatttgt	atatgtgctt	accctgctta	ttgttatcac	aggagcctgt	120
ggattttatc	ttttcaagta	tgcagggaca	cgccacatct	tctccaataa	aataatggtc	180
attaaaaaga	tggagcggga	aaaggaattt	caaaatatac	aatcagtaca	gattgtgagc	240

gcagataccc	tatttttcacg	tattgaacag	tttgagccgg	gcgtaaatgc	ctcttatgag	300
gaaaatgata	tcaagttcct	gataaacgac	cttgccaaac	aatgggagaa	aaacagcttt	360
gacaagcgca	ataagatgtt	ctggcatctc	gcttcgggtat	atgaaatgtg	gtttgccgac	420
aagaaagaac	tatggagcaa	acaggataac	ataataaagt	tcaagaaaaa	tctggaggag	480
tgcgaaagtcg	gactccagaa	gaaggaaggg	gaacttaaaa	ataaaggagg	caagccatga	540

<210> 4962

<211> 321

<212> DNA

<213> B.fragilis

<400> 4962

tatggggatt	gcgcggaccc	ttccagcccc	gtgggtggaag	acatgggcag	taacgaccgg	60
ctgaatcagg	tgggtgctcca	aaaagttatc	agtacacgca	agatggaact	tatcgaggaa	120
ctgcaaataa	tggatagtaa	ggatgtactt	ctgtacaaaa	aactggcttc	gcaaatcaac	180
gtgtttctgg	acaccaaaaga	agccatacgt	aaagcggtta	ttgaagaaag	ccttgtgaga	240
aaaagacctga	tcgggtgcat	tcaggacaat	aaacaggcta	cccgaagct	gacattggga	300
aacattattg	tagaaaaagta	a				321

<210> 4963

<211> 957

<212> DNA

<213> B.fragilis

<400> 4963

cgaaatagac	tggcacttcc	gccccgcgtg	aagacggaaa	gacgtccgga	gagtacaggt	60
gtgtatgcac	ttaaaatatg	gcttaacgga	ggatctgttt	tcttggctca	acccgtatcg	120
gtaaaagcag	gaaaacaata	tacactctct	ttttggaaca	aaggaagtgt	gggaaatcgt	180
gaaatagtag	taactctgtt	ttggatgat	aacgggagta	taaaaagcag	agaaaaaata	240
ctttctataa	gaacgggtaa	agatgagtgg	agaagagtgg	aaagtactgt	aacaataccg	300
gagaatatcc	atagtatggg	gatggggata	aggacacaga	gctatcaggg	ctatatgctg	360
atcgatgata	tgctactggt	actcaaagag	agcggggccg	acatatctgc	cgttccggaa	420
gctcccgata	atttaagaat	gaaagcatat	cagaatgaaa	tggagatttg	ctggaacaag	480
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aaggatatctt	ataaattgga	cggagtaact	attgaaccca	aagataatac	tttagagttt	840
ccggagttcg	aaggatttta	taaacgattt	cgcttggaag	tttatattga	tgagggagaa	900
ggtcgtgaat	gggagattct	gtatcctcat	ttgggcgtaa	aaagaaatga	aaaatag	957

<210> 4964

<211> 195

<212> DNA

<213> B.fragilis

<400> 4964

gtgatgttac	gctgctggtt	cataaattca	ataacacagt	ctgccagaca	gaaaactgta	60
tccttttcta	tctttattcg	cacaagaata	ttgattccaa	aattttattgt	tgccaaagaa	120
gaacgtaaga	aacatgtata	tagtttagtt	cttgtcacaa	tactgattaa	gtttttattgc	180
aaatacaaaa	cttaa					195

<210> 4965

<211> 1875

<212> DNA

<213> B.fragilis

<400> 4965

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tttagtaaga	tttatgctgc	tattcctcaa	aaaacggtcc	atatagagtt	atcggtgggg	120
agaatccgta	ccatcatgat	caatgtcatg	ggtagaagtaa	aagtaccg	tatttatcgg	180
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aagtatgaaa	tgaaaagtgg	ggaaaccgta	gctactttgt	tgagttatgc	gggaggtttt	480
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tccgttgaag	cggatattgga	acgtttctca	aacaaggtcg	aaattcgtgg	cgctgtatat	660
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aaagcgggaag	gacttcgggg	agatgctttt	cttaacaggg	ctttgttgag	acgccaacag	780
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gocgacctat	gtttgcagaa	gaatgatgtc	ctctacattc	ccagtgtgaa	agatattgag	900
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cttgactatt	acattgaaca	ggccggcggc	ttcggaacc	gggcactgaa	gcgacatatt	1680
tatgtagtat	atatgaatgg	aatgggtgtc	cgtctgagaa	agagtgcggt	ttgtgcaatt	1740
gaaccaggat	gtgaaataat	agtaccaagc	aaagaaaata	ggaaaaagac	tgtgccgagg	1800
gacgttgcag	gaatgaatac	ttctattgcc	tctatcgctg	caatggtggc	tgccatggtc	1860
ggtatgataa	agtaa					1875

<210> 4966

<211> 399

<212> DNA

<213> B.fragilis

<400> 4966

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<210> 4967

<211> 951

<212> DNA

<213> B.fragilis

<400> 4967

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<210> 4968

<211> 1527

<212> DNA

<213> B.fragilis

<400> 4968

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<210> 4969

<211> 1719

<212> DNA

<213> B.fragilis

<400> 4969

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1970

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<210> 4970

<211> 213

<212> DNA

<213> B.fragilis

<400> 4970

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<210> 4971

<211> 450

<212> DNA

<213> B.fragilis

<400> 4971

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<210> 4972

<211> 2319

<212> DNA

<213> B.fragilis

<400> 4972

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<210> 4973

<211> 2847

<212> DNA

<213> B.fragilis

<400> 4973

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<210> 4974

<211> 1083

<212> DNA

<213> B.fragilis

<400> 4974

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<210> 4975

<211> 2475

<212> DNA

<213> B.fragilis

<400> 4975

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<210> 4976

<211> 3030

<212> DNA

<213> B.fragilis

<400> 4976

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ggtttcacac	ccgaagtgtc	gggcggcatc	gaccgtcaga	tctatccggg	gacagctacc	3000
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<210> 4977

<211> 1731

<212> DNA

<213> B.fragilis

<400> 4977

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ccggcgctgc	ataactataa	agactcagtg	ctttatgtca	ccggtagatc	ttcgggttct	360
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aatgagttgg	agatgaaatc	gctgactatc	gatcaggatt	attattttgc	tgtggaagcc	1680
tttaacgaaa	atggtgtatc	tttaccttcc	gaaactaaat	atgtagaata	a	1731

<210> 4978

<211> 1545

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (63), (68)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4978

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atttacggca	gtgaaaactg	gtatcagaac	cgcagcggga	aatatggcgg	atatgaagac	180
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tattataatc	tctaccggat	agcagaggat	aatcctgaaa	tggtatctta	tctggatgct	300
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ataacgacat	tcaatattga	ggcgggtaat	gcacatcatc	cttattatat	agaggtaccc	1500
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<210> 4979
 <211> 1314
 <212> DNA
 <213> B.fragilis

<400> 4979
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 actcttgtcc agaaacaaac ttcccgttac ttttgggatt ttgcccatcc cgagtcgggt 180
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 attctggcgg cttcttcgcc tacttatccg attcgtgaat cgggtgtatca taagggggtg 720
 gccaaactcta ttacattcaa gaacggaaaa gaatattacg gcatccgctt gcccttgggc 780
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 gatgccttca acctgacaga aaactgggtt gcttctctct atctcgccat cgatcaggga 1200
 ccgattattg tgatgattga aaactatcgc tcaggcttga tatggaaact cttcatgagt 1260
 catcccgatg tacagagagg attgaagaga ctgggggttcg gtcagaaga ataa 1314

<210> 4980
 <211> 342
 <212> DNA
 <213> B.fragilis

<400> 4980
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 caccacactt atcacccaac agcaatgagt cacactggct ataattacgg gcattatcag 120
 ccttttcggc tacacggacc aacacacagt gacaggctga gttcttcatc cgtcaataac 180
 tataaataca taggttataa ttacagtga tatacagatc cacgctcaag tagtggagag 240
 ggggtagatg ggcgtatgcg tgaatatcaa actaccactg tacgtcgtta ttctaatacat 300
 atgatacgtt ttaacaagat gtttggttaa cattcaatat aa 342

<210> 4981
 <211> 267
 <212> DNA
 <213> B.fragilis

<400> 4981
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 gcccgtaatt atagccagtg tgactcattg ctggttgggtg ataagtgtgg tgcacatact 120
 ttcccttaca tggatatcca taatgaaacg gcagttgtgg agcatgaagc gactaccagt 180
 aagattagtg aggatcagat attttattgt aatcagggtg gtactaatgg ctttccaagg 240
 gggctgcaaa gggccgctct atttattc 267

<210> 4982
 <211> 234
 <212> DNA
 <213> B.fragilis

<400> 4982
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 ggttatgaac ggacattgcg agcattagac acttcgctcg cccgtttggg attggattac 180
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<210> 4983
 <211> 564
 <212> DNA
 <213> B.fragilis

<400> 4983
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 actccggacg agattgtagt cggagcgcag gacgtatctg tgctttgcca taagaatatt 180
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 ggacgcagag ttacttgcta cccagtttc gaacaatatc tggatggggc ggactgcact 420
 aacgaaccgg ttgtaagaga tggtaatatt attaccggga tgggaccggg agctgccatg 480
 gagtttgcag tgactattgt ggatacattg ttgggcaaag aaaaagtga cgaactggta 540
 gaggctatgt gcgtaagacg ttaa 564

<210> 4984
 <211> 402
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (393)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4984
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 tcgtttaatg tgatggcaca ggtaaaggcg atttcgggac tggtaacaga tgttactggg 180
 gagcccgtaa ttggggcaag tggtgtagaa gtgggaacca ctaatggagt aattactgat 240
 ttaaaccgga agttctcggt aaagggtggc cctaattcac aattcttggg gagctatatt 300
 ggctacaagc aacaaacaat taaagttggc tctgaaagca cttataatat tgtcttcacc 360
 acgggggctgg aaggatcagc gctggccata cgntcagaaa ac 402

<210> 4985
 <211> 213
 <212> DNA
 <213> B.fragilis

<400> 4985
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 cgtgggttgt ggctgggtgc aggtctggta tcgttgggag cggccttcct gttggataag 120
 aagtacgaga tgacttccga tttatatccg gtcaatgtgt gctataacgt aatgcttgcc 180
 gtggagccgg aatgcccgga ctctcgatta tga 213

<210> 4986
 <211> 1125
 <212> DNA
 <213> B.fragilis

<400> 4986

gaagacatta	cgcataattcc	tgtgatagag	gactctgctt	ctgtatccgt	cactgctgat	60
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aaggagaaga	agaacaaaaa	gtttgacttc	agtgtgatcg	gtggcccgca	ttattccagt	180
gacaccaaac	tccgactggg	cttggtagcc	gccggactat	accgtaccga	cctgcccgat	240
acactgcttc	ctctctctac	tgtttogctg	tatggcgatg	tgtccactgt	cgggttctat	300
ctgctcgggtg	tacgcggaag	tcatatat	ccgaaagaca	agtaccggct	caattataac	360
ctttattttct	attctttccc	cagtctgtat	tggggcgctc	gctaccggaa	tgcggtgaat	420
gacgagaatg	aaagcagtta	caagcgcttt	caggcacagg	taaagggtga	ctttatgttc	480
cggatggcaa	aaaactttcta	tctggggcct	atggcaagtt	tgcactatat	cgatgggagg	540
aattttgaga	aacccgagct	ttggcaagg	atggatgcc	gcacctcaa	tgctcagtgcg	600
ggactttctc	tgggtgtacga	ctcgagagat	ttcttgacga	atgcctataa	aggatattat	660
ctgcgcatag	accagcgttt	cagtcgggca	tttctgggga	atgactacgc	tttcagtagt	720
acggaactga	ccaccagtta	ctatcgccgg	gtgtggaaag	gcggaatact	tgccggacaa	780
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tcgtaactcca	tgctggtcta	ttatgatggc	cggtagccgc	ataagaatgt	ggtgggacatg	900
caggtggaac	tccgccagca	cgtatggaaa	cggaaacggag	tagccgtctg	ggtgggagcc	960
ggaaatgttt	tccccgactt	ttcctcattc	aaagtgaac	atatacttcc	caactatggc	1020
tttggctatc	ggtgggagtt	taagaagaga	gtaaatgtac	gattggattt	agggtttgga	1080
aaaggccaga	ccggatttat	atttaatatc	aatgaagctt	tttaa		1125

<210> 4987

<211> 210

<212> DNA

<213> B.fragilis

<400> 4987

ttaaaaagg	cgccggggaa	cccgcctaac	gggggaaaac	aattgccaca	attgtttctc	60
caaaaaaaaa	ttttttcccc	agtctcccaa	agaaaaaagg	gaaaataccg	agcccggaat	120
actcttttta	atgaaaaaag	gccctatata	actctagaaa	aaaaatttgt	cgggtataag	180
gagatggaat	ggtctaaagc	cattaattag				210

<210> 4988

<211> 564

<212> DNA

<213> B.fragilis

<400> 4988

ggtttgaaa	aggccagacc	ggatttatat	ttaatatcaa	tgaagctttt	taatagtata	60
aaaaaatggt	tccgtaatca	ggagaatttg	ttctacctgt	tcctgtttgt	gctgatagtg	120
cccaacgttg	tattgtgttt	caccgaacct	ttgccgcttg	tagccaagat	tgccaatgtc	180
ctgttgccat	tgggggtgta	ttatctgatt	atgacccttt	ccaggaattg	cggaaagatg	240
ctctggattt	tattcctttt	cgtattcttc	ggggcctttc	agatcgtgtt	gctctatctg	300
tttgggcagt	ccatcattgc	ggtggatatg	ttcctgaacc	tggcgactac	caattcttcc	360
gaagccatgg	agttgctcga	caacctgttg	cgggctttga	ttacgattgt	gatcctgtac	420
atccccggccc	tgatactggg	gatgatctcc	attgtccgta	agcgtacgct	ttccgtcggc	480
tttatccgca	gggaacggag	acgtgcgtgg	gttgtggctg	ggtgcaggtc	tggtatcggt	540
gggagcggcc	ttcctgttgg	ataa				564

<210> 4989

<211> 207

<212> DNA

<213> B.fragilis

<400> 4989

agagacttcg	aaggatttca	ctttcattgc	cgcgcacgc	atccggcaga	agaccgggag	60
atttacgtac	tggtagtggg	agagacttcc	cgtgcgctca	attggtcggt	gtacggttat	120
gatcgtgaga	caaatcccaa	actgtcggag	gtatccggcc	tgacggcttt	tacgaatgtg	180
cctgacccaa	tcgaatacaa	ctcataa				207

<210> 4990
 <211> 402
 <212> DNA
 <213> B.fragilis

<400> 4990
 cggcttttac gaatgtgcct gacccaatcg aatacaactc ataagatggc cccaatgctc 60
 atgtctgccg tttcggcgga gaatttcgat tccatctatc atcagaaagg aattattacc 120
 gctttcaaag atgcagggtt caggacagct ttcttttcca atcagggtta caacacctct 180
 tttatcgact gctttggaca cgaagccgat cactgtgact tcatcaagga ggatccgttg 240
 actgccggtc agaatctttc ggatgattat ctggatgacc tgggtgcaaga ggtacttgct 300
 acgggaaccc gtaaacgggt ttcccggttg taccgctccg gtatacattt gaataatcgg 360
 aatcgatgc tcgtccagac atctcttatt ctagccgaat ag 402

<210> 4991
 <211> 324
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (132), (159), (161), (209), (249)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4991
 ccttcgtcat cccaaaaacg tactttttct tgcactctgt ctgggctata ttccaagcga 60
 cttttaccag gaattctttt ggtttcttta agaggaggta aacttaagtc cgaatttttc 120
 tccccagcta anagaatcat agaaacctca tctctcgtnt ntatcataga aactccacct 180
 attgcatatt ttaattttatt tatccatant gaaaaatcta tgtctggttg ggtattagtt 240
 actgtgaana ttgaaattct atcttcatca aataatttta atgattcttc gaattttatt 300
 gggcaatctt tggaagtaac ataa 324

<210> 4992
 <211> 864
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (147), (187), (235), (237), (264)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 4992
 tccccaatTA aattcctttt ttcttataag ccgaaaagga tttttctaata tgatttaaatg 60
 gccttatcgg attatgttac ttccaaagat tgcccaaata aattcgaaga atcattaaaaa 120
 ttatttgatg aagatagaat ttcaatnttc acagtaacta ataccccacc agacatagat 180
 ttttcantat ggataaataa attaaaatat gcaatagggtg gagtttctat gatanancga 240
 ggagatgagg tttctatgat tctnttagct ggggagaaaa attcggactt aagtttacct 300
 cctcttaaag aaacccaaaag aattcctggt aaaagtcgct tggaatatag cccagacaga 360
 gtgcaagaaa aagtacgttt ttgggatgac gaaggttatt ggaagacaat aatcctttta 420
 agatttgatg ttttaaccat ggagctagac gcaaaattca taaataaaga tatgggtaac 480
 tctttttctg tattgacaga ttatattgag tcgtttttat cagaaaaagg ggagttcctg 540
 tttccagaag ctgaaaatta tctaaatgaa caaaaggtaa aaatacaaaa ttattatcct 600
 ttgtttgaga ttgctagaac gtgtttacat ctattgtctt atgtggaaaa gtacacagac 660
 tcattatcgt cggaggagca tataacagta ttaggacatg aaccgataaa acctagattt 720
 ttcaaaaaag ataaaaatgg tccaccaaaa tatgagttgc gaaaaagaga tgtatggaat 780
 ttaaaagagg aaagggaata ttattcctct agcataataa catttaagtc ttcaccacgg 840
 ggctggaagt atcaacgctg ttcc 864

<210> 4993
 <211> 633
 <212> DNA
 <213> B.fragilis

<400> 4993
 aacgcataca atatgaaaga acattcaata aaggcgggtca ggctaacccc cacagtgaaa 60
 gcccggtctgg acacctttta aggaagcgac acgggtcagtg tctgtatcga tagaatgatt 120
 acttttttttg aaatcacagg gttcaatccc cgctacgcat cccggaatcc gacggcactg 180
 gtggaaaaga gaattgagga cgttgtcaga atcatcaagt cccaggaacg ggatatactc 240
 aagcccgtag ttgagaaact ctccgccata aacaacaccc cgcaggagtc acccgattat 300
 gcccggttga tgaacgagtt ccgggatctg aaagatgaaa accggaaatt gaaagaaagg 360
 ctgcaggcgg atgatctcca taccacagac gccgccgtat accatgacaa gctcaaacgc 420
 ctgggcgacc tgctgaaata ccagcttgat ccggagaagt tttcaacgat aaaatacagc 480
 gatgatgtaa gagtccccgt caacaccctg cagttgctta tcaagaagat caacgaggaa 540
 tatgttcttg tcaaccgcat aggccgctat acactccgca cgtaccggat aacaaagata 600
 aatgctcccc ggctggtaga ctactctgaa taa 633

<210> 4994
 <211> 312
 <212> DNA
 <213> B.fragilis

<400> 4994
 tatccgatac cgacctgcat gatgtcggct ttgtccttta tctgtaccc tgaaaggagc 60
 aaatttgcct taaaaaacia aaggatgaaa ggattgacag aactgattgt ggcgggctgt 120
 attttattcg gcctgcttct tacgccgctg gttttctcca tactggattt tataagcgga 180
 gtgcgcaagg cccggcagcg cggtgaaagg atcacctcgg accggtatcg cagaagcgta 240
 aagaaagggc cggttattaa acctgctgct gtttcacccg gggtggaaga cagcggggtc 300
 agaaagggtt ca 312

<210> 4995
 <211> 831
 <212> DNA
 <213> B.fragilis

<400> 4995
 aaatcgagat atatgaataa ttacgttaag acttccgctt ccagaccggt gggcaatccc 60
 ggaaacggta tcaaccccaa agacgtgctc accctgatcg acatcgacga tctggtctat 120
 ttccctcccc gtgacggtgc cggagtgggt ctggagggtg acatcggtgt aaagccgtcg 180
 gcttactcca cggacttgta tttaactccc ggtactgtgg agctgagctc caacggtgaa 240
 ggggaaaccg acgccaaggg cttcacccct tcggttaagg gaaaacatcc gggtaacaaa 300
 caggaggttc gtgagttcaa gaccaactgg ctgggacgcc actgcatagc tatcctgcaa 360
 tactgcaacg ggcaggatcc ggatatcctg ggttcccctt gcaacccttt ggaaatgtcg 420
 gtcaattata ccggaataaa agacggcaac gcctcggagt tcaccttcac gcagataagc 480
 aaaggagacg atatcggtat ctataaaggc accatcccac acgaagagcc ggtggcgact 540
 gttcccgcac cggcaacgga aattcccctt aaaggccgcg ggcagtacca gctaagcgcc 600
 ggagcggcca agatcgctac cattaagggg gccaaacacg gcgacctgtt caccctgctc 660
 ggggtggtgt ccggcgtagc tcctacaatc gaaaaggcag gacagacagc cttcatgctg 720
 aaaaacggaa agacgttcac cgcttcaccg ggcagccaga ttactttcaa ggccttcgat 780
 accggcgggg gagccatcca gtgtgtggaa cagtcgagat tcgaggttta a 831

<210> 4996
 <211> 186
 <212> DNA
 <213> B.fragilis

<400> 4996

aatggaatcc	agaaaaaaaa	actgattttt	catcgccgga	ggctggaaat	caaaagggcc	60
tcctggctga	aaatggggac	ccgttacctt	catccctgcg	accgcagtga	agcgggcatg	120
caggcacgga	agctggataa	cgagatcctc	tcttgtaata	accgtttaat	gaatttatat	180
gaataa						186

<210> 4997

<211> 1488

<212> DNA

<213> B.fragilis

<400> 4997

ctgttttttac	acgtgcaaac	acttgtaaag	aactccttcc	gaagaccgcg	ccgctcagaa	60
gccgaaaggc	aattgcctga	ggggcaaata	gtgaaatatg	attacattaa	gggcaggcag	120
gcagaagggg	tgggaacgaa	aaaccgcttc	cggtatttcc	ggaagcggtc	aggcaaaaca	180
aggcaattgc	ctttcttatc	ccccgcctag	gtcatcgagt	ccgggcatgt	agggaccgga	240
cctgctgctg	ccggacttgc	ccctgacggc	acgcctccag	gccccccgca	tcatcaggta	300
cttgaaggcg	tcggagaagt	tcgtggagag	catgggcagt	ttcttgggct	ccagcttctc	360
ggacttcttg	accttgtaga	tgatcttctg	ctgtcccttg	taacggatac	ccgcaggcgc	420
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gaactggctg	gccagctgcc	tgaaccatcc	gggaggaagc	tcgtaaaaag	tcttgtgaag	780
gcgggtacag	gggtccgtcc	gctgtcctac	tatcaggggc	agctgggtac	cgaagtccac	840
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ttctccgtac	cgtgtccctg	cggtatactt	gtgcctttcc	ccgaaagcga	tatagaagcg	960
cgtgtcacgg	cgaagccccg	gacgcacccc	cactacagac	ttaagggaag	cgtggagtct	1020
gagcgccccg	tcgagaaggc	gacggacgta	ctcaggcgta	aggatgtcga	tgttggtaaa	1080
actcgaggcg	ttgatgaagt	aggtctgccc	cttgccgcat	ttcagcagcc	ccgcctcgta	1140
ccaggcgatt	ttcttcttaa	gagccccgca	gtccgtccgt	gtccttcccg	cttttaccag	1200
gcggacgcgc	aggctgttca	gctccgcagc	cgctcgggcg	atacgcagga	tgcgctgagg	1260
atcgaccaga	cagacgtaac	ggaagtacca	gtcatactca	ccctccagca	cgtcgggcat	1320
gtcggtggtg	atggtcaccc	ccagaaaata	gtggctgcat	ccgtaacgta	tggcatcccc	1380
gcgcaatacg	ggcatggccc	ggttgacttt	attgtcgggg	gcgtatttgg	attcgtcgaa	1440
gaacaaatga	acgaccgatt	tgcccgcctg	aaggaggggg	tgggtctag		1488

<210> 4998

<211> 348

<212> DNA

<213> B.fragilis

<400> 4998

atttatatga	ataatatgga	gcgtttgccc	gcggacacct	ttttcctgga	ccttgaactc	60
cgccaggagg	tggagcgcag	ggcctccctg	ggatatgctc	cggacgatat	cgctctttat	120
ctggggctgg	atgcggagag	ttttgtcttt	gacgccggaa	gggaagggac	caccgtgtat	180
tcccttatgc	gcccggggagc	attgaaggcc	ggggccggag	tggagctaaa	actgcaagaa	240
caggcacttt	caggggattt	ggatgccatg	gaactgctgg	agaaagtgcg	tggtcgcagg	300
agttttgaaa	taatagtga	gcaaatcgat	gaagacgaat	ttgggttaa		348

<210> 4999

<211> 1668

<212> DNA

<213> B.fragilis

<400> 4999

cccaccgatg	atgtggagg	tcgttactcc	catatcatca	aggttcatca	ccgactggat	60
agacaccacc	aacctgggtg	tcgtcgcggg	ccggctgcca	agagtaccgt	catacaagcg	120
cgccggctcg	ccgattgcgt	gtatgacatg	cccggctgcg	cgttggcttt	cgtggggaat	180

acatatacca	acttaaggga	taatatcatg	cgggccgtca	agaccggctg	ggaactgatg	240
ggactctatg	aaggcgtgca	ctatgtatcg	tcctgccggc	caccggaatc	ctggcgagg	300
cgttgccagcg	tgatcgtcga	cgattacaag	aacacggctc	ctttcttcaa	cggatgcatt	360
atctttctgg	gatccctaga	ccacccctcc	cttctggcgg	gcaaactcgg	cgttcatttg	420
ttcttcgacg	aatccaaata	cgccccgcag	aataaagtca	accgggccat	gcccgtattg	480
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aaggcgccctg	cgggtatccg	ttacaaggga	cagcagaaga	tcactataaa	ggtcaagaag	1500
tcggagaagc	tggagcccaa	gaaactgccc	atgctctcca	cgaacttctc	cgacgccttc	1560
aagtacctga	tgatgcgggg	ggcctggagg	cgtgccgtca	ggggcaagtc	cggccgcagc	1620
aggtcgggtc	cctacatgcc	cggactcgat	gacctgacgg	ggggataa		1668

<210> 5000

<211> 1077

<212> DNA

<213> B.fragilis

<400> 5000

tggtctgata	tcaagaccat	tccactttca	ggcaattgcc	ttgttttccc	tttacggggc	60
aaggcaattg	ccttttttca	gtcctttgta	cgcagccggg	tatcggggat	ctttacggcg	120
tatcatttaa	aattcaattc	aatgaaagag	caaatacttt	cctattttaga	aggaccgcgt	180
gattactccc	aaggggtagc	cctgtatgag	cagttcggtc	ccaaccgcat	gctgaaggcc	240
aagttccggc	agatcgggga	gtgtgagatg	acaaggggaa	cccttatcga	ggagctgcgc	300
aagctttccg	gcatgagcga	ggcgggaattt	gccggcatgc	acaggaaggc	gcacatatt	360
ccgtcgaagg	cggaaacagcc	tgtagcccc	gtccctgtca	ggatgtatgc	ggacgacctg	420
cttatcgccc	ttgcctcacg	cctgggggta	acggtggaaa	aactggtaag	cgacgatttt	480
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ctcgaaaaagc	cacaaaagc	gtactcggag	gcaccggaaa	ccgtccgtaa	ggccatccgc	600
ttccgggagg	agtttccatt	cctgagacaa	cctgactgtc	cggacgaact	caaggtgctc	660
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acaccggatg	acgtggccac	cggggagact	tacctttggg	ctaaaacggc	cgtgggagac	780
ttcctggaga	accgccaat	gtgggaagag	ttggagtatt	ataagaataa	cggagaaatc	840
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gatctggaac	tgtccaagca	gctgggtaat	gccaaagtcta	acatatccaa	gggaaaaaac	960
gaactcgaac	aagcaccgga	tgaagaaaag	agggccaagg	ccatggagaa	gacccgcaaa	1020
tggacggaac	gcaaaaatct	gctggaggct	gaaatggaat	ccagaaaaaa	aaactga	1077

<210> 5001

<211> 630

<212> DNA

<213> B.fragilis

<400> 5001

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cgggcgtatt	acgacctgat	ggagatggtg	cgcggaactgc	gtgcccgtat	gaggtataac	180
gggaaggtga	ttacaaaagc	cgggatcatc	cggctgctca	agtctgaggt	atacgggctt	240
tccgactgga	tggcacggca	ggtatacgc	gactccgtca	atttcttcta	cagccaggaa	300
aacatacgtc	cgcaggcttt	tgccaacctc	tatgccgaaa	agctggagaa	gtgggcccgt	360
tccatgttcc	tgacggggcaa	gggggaggaa	gcctcccga	tactcgagcg	ggcggccagg	420
ctccgggtgc	gcttcgcatg	tgacgaacag	gagatacccc	aggaactttt	agacaggaaa	480
cccgtggtga	tctatacatg	tgacgggtcc	gatatgggcg	ttccggatac	ggaccgcaag	540
gagctggagg	cgttcacatg	ctccattccc	gaggtgcctt	ccgtggtacg	tgagagggta	600
aaggaggatg	cacgcataaa	gaagttttga				630

<210> 5002

<211> 1014

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (110)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5002

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atattgacgg	tatcctcaat	agcgttcatg	gtgatttgtc	tgggcctggn	gatggtgaaa	120
gcttgtgcgg	gaggagacgg	gagcgaatgg	aaaaagaagg	tggcggcaga	cacgctgcat	180
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gatatccgcg	ctacgccgac	tatctatctg	cttgacgggc	ggaaacgggt	gataactcaa	960
gatacttcga	tggaaacagtt	gatagactat	ctggcgacac	aggccggaaa	gtga	1014

<210> 5003

<211> 381

<212> DNA

<213> B.fragilis

<400> 5003

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caggcaccga	ttgttggttc	gggttacaat	ctgaaccgtt	atgcgttgga	gaatatcaga	180
ttgtgcctgg	tgacacatgc	caaaccggaa	cagggtgatcg	atatcaggct	tgtgtatacg	240
tactctgagg	ggaagggtgg	tgtggcttta	ccggagttga	agccgggtga	gtatcgtcct	300
gcggtgatac	tgaaggagaa	tgaaaaaaag	gtgtatgtac	tgccatgcg	gtgggtggta	360
cgaggaaggt	ggagaagata	a				381

<210> 5004

<211> 216

<212> DNA

<213> B.fragilis

<400> 5004

accggtttac	tctctcttca	tctgtaactg	tatccgtttc	cgttcgaggt	ctatgctcaa	60
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gttggcaagc	tgggagagat	ggacaagccc	gttctccttg	atgcctatat	cgacaaaagc	180
tccgaagttg	gtgatgttgc	tgacaatacc	gggtag			216

<210> 5005

<211> 2127

<212> DNA

<213> B.fragilis

<400> 5005

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aaagaaatca	ccggcggact	cgacgaagtg	cagatagaat	ctatcaaaac	gcagtacgat	180
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aacgggcttg	tccatctctc	ccagcttgcc	aaccgattca	tcaccgatcc	caccgaagtg	2040
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<210> 5006

<211> 324

<212> DNA

<213> B.fragilis

<400> 5006

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aaaaaaacgg	atacacacac	tctaaaacag	atgaatatgc	cggtatcggt	caaatatatt	120
ctttatttac	ttctgttagt	tattgggtgc	tgtcctccca	tggcaggaca	tgctgctacc	180
ggtgagaaac	ccatactgat	gatctgttcg	tacaatccgg	gagcgatatc	gaattctgcc	240
aatgtatccg	actttatgga	cgaatatcag	aggttggggg	gcaaacgggg	agtgggtcatt	300

gaagacagtc atcaccgggg gtgc

324

<210> 5007

<211> 834

<212> DNA

<213> B.fragilis

<400> 5007

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gtgaaggtgc	attctaattg	cggataccgg	gtgctgtgtg	gattttccggc	agcgcgtcac	180
acggtgctct	cgttggtgaa	tgatacgggc	gtagtacgcg	atatccttat	ttatcaaggt	240
ggttacgtac	gtatccgggg	taaatatgtg	ctggaccgta	atctggcggc	aggcgggaaa	300
ttagcacagg	tagccatccc	gttgggggtg	gaagtggata	ccacgcttaa	tcgggggtacg	360
tattttcagt	ttggctgtcc	tactgatcga	tgggaggaga	actttatgcc	ctgtcgcggc	420
agtgggtacg	atggcacggc	agagagtcct	gcacggatta	atgagttgga	cccttcaccg	480
gaggggtggc	ggctaccatc	gcgtatcgaa	atggaggcac	tgatgaacag	tcctgctgct	540
ccgatggagc	ttcaacggga	ggaggaccgg	acgaatatct	gccttctgag	tgacgacgga	600
gtaccgggtg	atctgccgct	gtgocggacac	cggagtcaca	tcaacggctg	ccggattgtg	660
attccgcatt	ggcatcgcta	ctggacgggg	agcagccaaa	gcccgggtata	tggttatttcg	720
ctctgcgtgg	aaccagccg	gcagatgtat	ctgatgcacg	atatgaaaaa	atatgggttt	780
ccggtgagaa	gcattttcaa	cgatgaacga	caaattggta	acgataaact	ttga	834

<210> 5008

<211> 911

<212> DNA

<213> B.fragilis

<400> 5008

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ttgagccgtc	actctgacaa	tagtgtagcc	gctgtcggag	ttgtcaacca	gattattatg	180
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gcattcgcct	ttttccaggc	tattttctct	actctttccg	cttcattgct	cagtgccaat	480
aaagccatat	atccgatgtt	ggtgacggta	gtagtcaata	ttcttaatat	tatcggtaat	540
tattcgtctg	ttttcggtaa	gttcggctgt	cccgaactcg	gggtggaagg	ggcggctatt	600
cctacagcct	tcagccgtgg	agtatctatg	gtgattctgt	ttgtcattct	gttcggcaaa	660
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gtcattactt	tttttatcaa	tatgcttggg	gtcgaggcgc	tggttaccgc	tacttattgt	840
gtcaacatta	tcattgttcg	ctatatattc	agcatctcca	tggcccaggg	aggagctatc	900
tggatcggac	a					911

<210> 5009

<211> 774

<212> DNA

<213> B.fragilis

<400> 5009

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gagctgaaat	atgatgttat	tattttgccg	tggggagcta	cggaacccca	taattttacat	120
ttgccgtatc	tcaccgattg	cattctcccc	catgatattg	ctgtggaggc	agccgaactg	180
gcacttagcc	gttcgggtgt	ccgttgcatg	gtgatgccgc	ccgtaccttt	cggagcgcac	240
aatccccggc	agcgtgaatt	gccgttctgt	atccataccc	gatatgccac	ccagcaggct	300
attctggaag	atategtatc	gtcccttcat	gtacaaggat	ttcgtaagct	gttgattttg	360
agtggacacg	gaggggaataa	ttttaaaggg	atgattcgtg	accttgcttt	tgaatatccc	420

gacttttctga	ttgctgccgc	aaactgggttt	gaggtgggtgt	cgcccaaagg	ctattttgaa	480
gcggagattg	acgaccatgc	cggagaatcg	gaaacttccg	tgatgatgca	ctatcatccg	540
gaactgggtga	atctggctga	ggccgggtgat	ggcgaatcga	aaccgtttgc	cattgcttcc	600
ctgaacgaaa	aagtagcttg	ggtacctcgt	cattgggaca	aagcaacagt	agacagtggg	660
gtaggaaaacc	cgaaaaaagc	aacagcggaa	aaaggagagc	gttatgtgaa	accgatcgta	720
gagaaactcg	ccggactttt	tgaagaaatg	gcacagcatg	atctatatga	atga	774

<210> 5010

<211> 357

<212> DNA

<213> B.fragilis

<400> 5010

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aatgtggctg	ctgccctgaa	ggaggctttt	gactttttct	gggtgggttt	ttatttgggtg	180
aaacacgatc	agttggtagt	gggcccgttc	caaggttcgg	gggcttgcac	acgtatcccg	240
aaaggcaaag	gagtttgggg	gactgcctgg	cacgagggtg	ccacactgtt	ggtgccggat	300
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<210> 5011

<211> 201

<212> DNA

<213> B.fragilis

<400> 5011

gaattcaaga	acatcttcct	gctaaaagggt	gcttgtagaa	agaaatcccc	atttatactt	60
ctccgaatga	cgacaacggg	tatggatgga	aaagcgactg	tcactttaca	taattatgaa	120
gataaaaagt	atccggccgt	attgcatggt	aacaggctgt	ggttacggcc	ttatgaagcc	180
attgcctgga	agcttactta	g				201

<210> 5012

<211> 459

<212> DNA

<213> B.fragilis

<400> 5012

aaactatacg	atatgaagac	tttaactttt	aaataacttaa	aattgtttct	gctggcagtg	60
gcaatgataa	atcttacttc	ttgtgagatt	gagatagatg	acttttatga	tgatgacaat	120
atcgggtggt	cgtattataa	taaatccctt	gatctttgca	gtcgtccttg	ggcagatacg	180
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ggagaagatt	atatccgggt	ggaatatccc	aacggacggt	attccgaatc	ggtgtactcc	300
tttacctgga	attggggagg	ccgttcgcaa	tactcccttc	ggatgggtata	tgggtccgggt	360
gatgtctctt	atctcgatga	tgtctggatt	cgaggggaatg	tgctgagcgg	atacctggat	420
ggacacgata	attatgttga	ctttaccgga	gtgagataa			459

<210> 5013

<211> 483

<212> DNA

<213> B.fragilis

<400> 5013

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tgtgcaggca	ggcattatcg	tccgttgaga	tgtcccgcag	ggaatcgggt	aaccggtttg	120
tttttgagac	aagagaccga	ctccttttgt	cttcagacag	atattcaacg	cttacagcaa	180
gtgcttatca	atctgctgac	caatgcggcg	aagttcacca	agaatgggtac	gatcacattg	240
cagtttgagg	ttgagaagga	gaagaatcgg	gtgttggttg	cggtagcgga	taccggatgc	300
ggcattccga	aggagaaaca	gaaacagggt	ttcgaaacgg	tcgagaagct	gaacgagtat	360
gcgaggga	ccggattggg	actctcaatc	tgtaaactca	cggtagataa	atgggggtggc	420

gatatctgga tcgacccgga ttatgaaggt ggggcgagat ttgtggtttc gcacccgtta 480
taa 483

<210> 5014

<211> 1392

<212> DNA

<213> B.fragilis

<400> 5014

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acggaccgta	tgttgccact	tgtgttcagg	atggcacttc	ctgcggtaat	tgcacaaatc	120
gtaaatttgc	tctataatat	tgtggaccgc	atctatatcg	ggcatatccc	gggaatcggg	180
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tcggctattg	tggccggggg	aggtgcgcct	cttgagacca	tagcgttagg	gcagggcaac	300
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<210> 5015

<211> 1752

<212> DNA

<213> B.fragilis

<400> 5015

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ggtaattact	ttccatataa	cttcattaca	caaaaggagt	ggggcggaag	tcttgccagt	180
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aaatttgtac	cggaagagtg	ggtgaaacct	gccgcacaga	gagattatga	atatctgttt	1740
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<210> 5016

<211> 339

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (14)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5016

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<211> 2301

<212> DNA

<213> B.fragilis

<400> 5017

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<210> 5018

<211> 675

<212> DNA

<213> B.fragilis

<400> 5018

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<210> 5019

<211> 1962

<212> DNA

<213> B.fragilis

<400> 5019

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<211> 2520
<212> DNA
<213> B.fragilis
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<211> 189

<212> DNA

<213> B.fragilis

<400> 5021

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<210> 5022

<211> 576

<212> DNA

<213> B.fragilis

<400> 5022

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<210> 5023

<211> 609

<212> DNA

<213> B.fragilis

<400> 5023

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<210> 5024

<211> 3288

<212> DNA

<213> B.fragilis

<400> 5024

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<210> 5025

<211> 270

<212> DNA

<213> B.fragilis

<400> 5025

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tcatctgtcc	gttttccacg	gggttattcg	tgtgtggcct	tgtaccaaga	ggcgtacct	180
ttcagtaagg	ccatgggatt	ggtgctcggg	tccgagatcg	ttatacccg	gaaagtatgt	240
atgggaagg	gcccttttgt	cctggaataa				270

<210> 5026

<211> 411

<212> DNA

<213> B.fragilis

<400> 5026

aaaaagatgt	caaaaagtag	ttttttactg	gatttttaagg	cgtttgtcat	gcgtggaaac	60
gtagtagaca	tggccgtggg	tgtgattatt	ggcgggtgct	tgggaaaat	aatatcttca	120
gtggtggcag	acatcatcat	gccaccgata	gggttgctgg	taggcggaac	caacttctcg	180
gaactgagat	gggaatttga	acccgccagg	gtagttagatg	gagtcgaaca	ggcggccgct	240
acgataaact	atggaaactt	catacagacc	atgctggatt	ttgtgatcat	cgcttttgcc	300
attttcttgt	tcatccgcct	gctctccaat	ctcaggcgca	aaaaagaaga	gacacccttt	360
gccccacct	gtcccgagca	acgaggaaaa	gttactttca	gaaatacgtg	a	411

<210> 5027

<211> 282

<212> DNA

<213> B.fragilis

<400> 5027

agacatatcc	cggaagccaa	ttcctggcag	gaaggacacc	ctcacccgaa	gatacagctg	60
acagtggagt	attatacagg	aggaaacatc	tcacagacca	ggacaaggac	ctttttgctt	120
gacattggcg	aggaaagtcc	tcccgggggtg	tattccggcc	ccattttacc	gaaccgggat	180
tataaggtat	tcatggtctt	gccggaagcc	gcggacagag	agattatcta	ccgggtcgaa	240
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<210> 5028

<211> 531

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (45), (83)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5028

ctacgtgctg	ccggagaaga	aagagctcgt	gccgacggac	aaggngcttg	cgtgtatcaa	60
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gccaagatcg	agagcgggga	gatgaatccc	gacagcttgc	gcaaggccat	cgagggctat	180
gccgcccaga	ttaccgaaga	actcctgcaa	gtgcaggat	cggtggcgga	cggcggacat	240
atcccgtgcc	ccaagtgcg	ttccggctgc	atcctccttt	acccgaagg	cgccaagtgc	300
agcaacgtcg	attgttcctt	taccgtcttc	cgcaacaagg	gggagaagca	gctcaccgac	360
agccagatta	ccgacctcgt	gaccaaaggc	aggactgccc	tgatcaaagg	attcaggagt	420
agggaggata	agcccttcga	tgcatacctc	actttcgaca	aggacttccg	catcgatac	480
gggttcccgc	ctcacacgga	caagtccaaa	ggaaaggagc	acaggcgatg	a	531

<210> 5029

<211> 204

<212> DNA

<213> B.fragilis

<400> 5029

ttttttacta	cgatgaagga	atattgcggt	tattggtttg	aaaacggaga	accgagggcac	60
gaggtatatt	cctgtctgga	cggggcggag	atgttttcct	gcatgataag	aggacaggac	120
ggcgtggaac	acgtggaaat	atccgaggaa	gatatttcct	ctccggagga	attccgggaa	180
atatgccccg	gagattttct	ttga				204

<210> 5030

<211> 2166

<212> DNA

<213> B.fragilis

<400> 5030

ttgaagcgta	ccctttacac	caatgcaaaa	gcagatcata	tggttaagaaa	agaggaaata	60
ctggcaaaaa	caggtaacgg	gctggaggtg	ttccgtcatt	atctgcccgt	aaaatggcgg	120
gtgggtcgaa	atttcctgaa	tccgctgtac	gctgatggca	gggcctcgtg	taacgtttat	180
tatgatcgcc	acagcgggat	gtacaggatg	aaggactttg	gtaacgggtga	gtattcggga	240
gactgtttct	tccttgtggc	gaaactgaaa	ggactggact	gccggagtg	cgctgatttc	300
gtggaagtgc	tgcacacccat	tgaccgggag	ttgtgcctgg	ggttggatgg	ggccatccct	360
tccggtacca	acaatcggga	gggaagctgc	cggacgacac	ggcccgtaac	gggtgcacga	420
gagaaaagtg	agggggaaaa	taccggggag	agcattcccc	gggatactgt	cacgggcacg	480
gaagggaag	atttatcccc	cgagcgtcct	ggaccaagcc	cctaccaagt	agctgaaaag	540
tctttcacag	agagagagct	cgcctactgg	ggcatactcg	gcatcacggt	agaggtgctg	600
caccgttacg	gggtggtgtc	gctcgccgag	taccggagcg	agacaaggga	aggcaagacg	660
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aaggtgtacc	gcccgttacc	ggaagtgcgt	ttcgtctatg	gcggtcatac	gggcgacaac	780
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gagaaggacg	tgatgacgct	tgcggctcac	ggtttccaag	ccatctgctt	caactcggaa	900
acctcgttaa	tcccggcgaa	gaccgtccgg	aagctcgtct	atcgcttcaa	gcacatcgta	960
ctgctgtacg	acacggacaa	gacggggctg	gaatgctcgg	agaagcaccg	ggtacaactg	1020
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gtgacggact	atttttaaagc	cggacacaca	cgggaggatt	tgatggggct	gttcctgaaa	1140
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gactgcccgc	cggagcaggg	agtcgctatc	gtgaccgccg	gggacgtgcc	gttaggctcg	1260
gaagagaaca	tactctgcat	cacgggcgga	gaaggagacg	gcaagagtaa	ctataccgcc	1320
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cagctctaca	agaacacggg	gcgggtgctg	cggcgtgccg	gtcgggagaa	aatgccgcct	1500
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caaagcatgg	acaagtaacca	ctacctgcac	gggggcatcc	atctggtcgt	catcgacgga	1620
gttgccgacc	tgatccggtt	ctccaacgac	gaggcggaga	gcgtggcgct	ggttgacgaa	1680
atttaccgcc	tagcgggaat	ttaccgcacg	tgcatacccg	ccgtggtaca	tttcgtgccg	1740
aacgggttga	agttgcgggg	acacttgggc	agcagagttg	agcgggaagtc	ggcggctatc	1800
ctctccatcg	agaaggacga	gaacccggag	gtgtcgggtg	tgaaggcatt	gaaggtcagg	1860
gatggaagcc	cgctggatat	cccgtgatg	cagttccgct	gggacaaaca	ggccgggatg	1920
cctgtctata	tgggagagaa	accgaggggtg	gagaaagaaa	ggcgcaagga	gaaggaaactg	1980
tctgaaatgg	cacgggcagc	gttcgtcacg	caaaaaaagt	atggctatat	cgagctatgc	2040
gaactgatac	aggaaaaccct	ggacgtgaag	gaacggacgg	cgaaggggta	catccgttac	2100
atgcgggaaa	aggaaattat	tgaaaaggag	ggcgactgct	atgtatatgg	acagcgaaaa	2160
atttga						2166

<210> 5031

<211> 423

<212> DNA

<213> B.fragilis

<400> 5031

gcaatccgca	caaaggatgt	gggcgataat	tggcgtaagc	cgggacagga	ttttctggtt	60
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tccaaatcat	ttgatgtcac	gttacgtgac	ttcacactga	ttgatgaaat	tttaaaacgg	120
gtggacacaa	aaggaattca	tacgatgtat	atagataaac	tggaacatag	gcatatcctg	180
tcctatcaca	ggaagggcaa	gatagaagcg	ctgaaagcgg	cacgggaaaa	ggcggtttac	240
ctgctggagg	caataggtaa	gaggccgggt	gagatcatcc	gcatcgtgga	aggaggggat	300
gctggaaaag	agatgtttgc	acaaggatcat	atcttatcgg	ttgccccgcc	cccatttgag	360
agaagccgca	cgataaaaaa	gagatattcg	atgctgggtcc	ggttcgggat	cgtggatcga	420
tga						423

<210> 5032

<211> 879

<212> DNA

<213> B.fragilis

<400> 5032

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acatcaccga	ctccgacaag	caggtgctcc	ggcagacggg	ctacatgggg	caccggcgca	120
ctcgtcacca	accggggcgg	cgagcaggtc	gaagcccttg	tcagccgcaa	cttcaagacc	180
aacgagctgg	tcgctttccc	gctctccaag	gtcaatatcc	cggcggagaa	gaacgggcat	240
accttcaccc	cggacgaaat	agcccggtc	aaacagggcg	aggcgggtgt	ctgccagttc	300
ctttccagag	ccaaggaggg	ggagcaaccc	aagatctacc	cggctcccg	acagttcagc	360
gcagccaaga	tgcagctcga	atttctcttc	ggcgaccggg	gcaagctggc	gatggatgcg	420
tacaagacga	acctgaaaca	gaccgccaat	caggagggtgc	cgaagacttt	ccgcaagcag	480
gagcttaccg	agaagtctcg	cctcgaactc	gaagccgggg	gaacgggtcaa	ggtctccgg	540
ctgggtggaca	agaaaggaaa	agcctaccaa	ggctacatca	catggaagcc	cggcgagaag	600
cccgcttcca	tgtttcccaa	ggactacaag	gcggcactcg	aagagggg	tgtcaagccc	660
gocgtggaga	acgaggtgca	ggtggcggtc	aattccgagg	gcaagaccgt	agaggcgacc	720
cgcaacctga	aagaagccct	gcaatccgca	cagcagcgcc	ccaccgggga	gcagaaacag	780
cagcaggagc	gcaagcagga	gcagaaagag	gaacggaaac	agtcacagaa	gcaggaacag	840
cccgcacaagc	ccaagcgcag	ccgggggtgtc	cgccgctga			879

<210> 5033

<211> 846

<212> DNA

<213> B.fragilis

<400> 5033

ttaaggaata	acatgataga	aacgtacttt	aacaacttga	tgcaggaggt	cgaacgtaag	60
atgggcattg	aatcttcccg	tatggaggga	gagcaagtga	tacggacttg	tcaggagatg	120
gtttcttttt	tgagggagcg	atcccgtgag	ttgaaggact	atgtcctaaa	ccaccattc	180
tccaacgtgg	aagaggaaat	ctgctttttc	aagtattaca	agcctgccct	gacgggacgc	240
ctgctgtatt	attaccgggt	ataccagatc	gagagcgggt	gttcatgttg	cccggagatt	300
gcccggatgc	attaccgcaa	ggctatgaaa	gaataaccagc	ggaaactgga	acgatacctt	360
ccctttttacc	agtattaccg	gagcggggcg	acttaccggg	accattacta	tttccgccgt	420
gccaaaaagg	agctgagccc	ggaaagcgga	agttttatgc	tggaggagga	ttcggtgatg	480
tcaaccgggt	atgacttggt	ggccgcaaga	ctgatagcgg	cggaaatgtt	acttggttat	540
ctgaaccgga	aagtgtctgt	ggcaatggag	ggggcgatg	ccgtgcagga	aaaggagcac	600
cattggacgg	accggaaggc	ggctgccgtg	gaactgatat	atggcatttg	ggcgatgggt	660
agcgtggata	acgggagggt	gagcattgtc	gagctcgtga	tgctgttcga	acaaatgttc	720
catattgacc	tgggagacgt	gtaccacacg	tttatctcca	tgcgtaaccg	gaagaacagc	780
cggacagctt	accttgatca	aatgaaggaa	cgtttgttga	aacgaatgga	cgaaacggac	840
ggataa						846

<210> 5034

<211> 1248

<212> DNA

<213> B.fragilis

<400> 5034

tctggttgta	aaatcggggc	agtgtcaacc	atTTTTTcac	cgattaatcg	catacgcaag	60
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atgaaagctc	cacggaaaat	ttatacatgg	accagtatcc	tgcttttctg	gtgctgttcc	120
cttatttttc	tttcatgtga	aaaggaagag	ctcggggaag	ccatggaaaa	tcggaaaacg	180
ttattcatgt	ttctgccgtg	gtccactgac	ctgacaggct	atttttacac	caatatcgcg	240
gatatggagg	cgtgtgtaag	cagaaggggg	ctggagcatg	aaagaattct	cgtgtttatg	300
tccacgagct	ctacggaagc	cacgatgttt	gagatcatac	attccaaagg	aaagtgcgat	360
cgtaaaacgc	tgaaaaggtg	tggcacttcg	gggtttacta	cggtaggagg	cataacgggg	420
atattgaacg	acgtgcagga	atgtgtccct	gctccgggtt	acgctatgat	cataggttcc	480
catggcatgg	gatggcttcc	cgtggacggg	acacaggcgg	attccctttt	ccggatgaaa	540
aagcattggg	agtatcagga	gcagccgctg	acacgctatt	tcgggggact	gacccgggag	600
ttccaaacgg	acgtgggtac	cctggcccgg	gggattgtag	gcgcggggcg	caaaatggag	660
tatatcctgt	ttgacgattg	ctatatgtca	tccgtagagg	ttgcctatga	actgaaagaa	720
gccacaagat	ttcttatagc	ctctaccagt	gaaatgatgg	catacggaat	gccttacgcc	780
actgtggggg	agttcctgct	gggaaatcct	gattacggat	ccctttgcga	aggattccac	840
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gaattagata	atatggctgc	tatcatgaaa	agtatcaatg	acaggtatgt	tttcgatgat	960
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ctggagcggc	ttgttcccta	taaaacccat	acgggtaaat	tttattccag	gaccaaaggg	1140
ccccttcca	tacatacttt	ctcgggtata	acgatctcgg	acccgagcac	caatcccacg	1200
gccttactga	aaggtagcac	ctcttggtac	aaggccacac	acgaataa		1248

<210> 5035

<211> 258

<212> DNA

<213> B.fragilis

<400> 5035

catgctgcca	aagttttttt	tctggtacaa	aaaaaccgcc	gcggagcctt	attcgggctc	60
tctacgggtg	ctatatactg	tattttcacc	aaatggcgta	tcgggaaagg	tgatttggca	120
acttgctatg	aacctgccag	tctcttcctt	gttttacaaa	aggttatccg	tccgtttcgt	180
ccattcgttt	caacaaacgt	tccttcattt	gatcaaggta	agctgtccgg	ctgttcttcc	240
ggttacgcat	ggagataa					258

<210> 5036

<211> 699

<212> DNA

<213> B.fragilis

<400> 5036

aatgctatga	acaggtatgt	atctgaaatg	atcgggacaa	tggctcctgt	tttcatggga	60
tgcggaagtg	ctgttttttg	cggggatag	cccgggtcgg	tcaccaccgg	ggtgggtacc	120
ctgggagttg	ccatagcctt	cgggctgtcg	gtggctcgca	tggcatacgc	tattggcgga	180
atatccggat	gccatataaa	tcgggcgac	acactgggca	tgtactgctc	gggaggaatg	240
gggggcaagg	atgccctgtt	atacattatt	ttccagataa	tcgggggggat	tctcgcatca	300
gccgtacttt	tcatactggg	atctacgggg	ccacatgccg	gccctaccat	gacagggagc	360
aacggctttg	ttgaggggga	aatgtttcag	gcctttatcg	ctgaggccgt	ctttacgttt	420
attttcgttc	ttgtggcgct	gggagccacg	gataaaaaga	aaggggcccg	taaactggcg	480
ggcctggtca	tcgggctgac	gcttgtcctg	gtgcataatg	tatgtattcc	catcaccgga	540
acatcagtaa	atcccgcgcg	cagcatagga	cccgcacttt	tcgagggagg	aggcgcgac	600
tcacagcttt	ggctatttat	cgctcgctcca	ctgacaggag	gtctggccag	tgccatagtg	660
tggaaagcca	tttctcagca	tagcgacaga	caacgatga			699

<210> 5037

<211> 1137

<212> DNA

<213> B.fragilis

<400> 5037

cataacatga	atgttgaaca	attagcaacc	atcatagccg	acacgcacca	acgattacaa	60
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cagagtgcgg	tcaaagccgt	aaaccagtgc	cagaccatgc	gtaactggct	tatcggtttt	120
tatatcgtgg	agttcogagca	gaacggagaa	gaccgtgcc	aatatgggga	attcttattg	180
aaaaacttgg	aacaaaaagt	taatttaaaa	ggattgaata	ttacattatt	caagcgttca	240
cgagtcttct	atatggtata	tccccagttg	gcaactgtaa	taaaaacgat	attgcctcca	300
acaggtgcat	caacgatgca	cttattggaa	atgcagggtc	ttggaaaaag	tgcactactg	360
atgcacttat	tacaaaatgc	tgaaaacaaa	caagatatag	ttaatacgat	agagcctcag	420
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aaacggcaga	taggagcggt	gagttatgaa	cgtgtcggct	tatccggcaa	catggaaaat	600
gcacttgctg	ccattcagca	gaagattcac	ccacaaaactg	taaccgatgc	cgtcaaggat	660
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gaactcgaaa	cacttctgct	cgaccatttg	cgagacttca	ttatcgaa	cggaaacggc	780
ttctgtttcg	aagccagaca	aaaaagaatc	cttatcggtg	acgaatttta	tttcattgat	840
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ttgggtgcgg	acaccacaac	cggattggat	gaacagatat	tcgtttccaa	ataccagttg	1080
caacttccga	ctgaacaaca	attaaaagag	ttgattttta	agacaatccg	gcaataa	1137

<210> 5038

<211> 363

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (191)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5038

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gggatcagtg	cgggaggaac	aaccccgta	acacatcatt	ctttctttgg	aaacatgcgc	180
ccgatcacgg	ngatagaact	gaataaacia	ttgacaccgg	ttttcggttt	cgggtcggag	240
gcggtcggaa	gctttaacac	ctcaciaaagc	aggaccattt	tcgaccgctc	caatgtcagt	300
ctgttggggg	tggagaacct	gaacaatctc	cttgggacct	ataccggggg	tcccagacct	360
taa						363

<210> 5039

<211> 417

<212> DNA

<213> B.fragilis

<400> 5039

aagattatgg	aaataatagc	aatcgaaagc	atagcgtttg	ctaccctcgt	ggagaagata	60
gaggggatag	cggcatacgt	gcaggcgctc	ggaacaaagg	agcgggagca	atggccggta	120
gcggataaga	agggtacgag	gaaggcaggg	ctatggatga	cgggaaagga	agtgtgtgaa	180
caacttgaaa	tcagtccccg	tactttgcag	cgttaccgca	cgaaccgat	catcgcttac	240
tctatctgcg	ggaggaagat	acgttaccgc	cgtacggacg	tggaaacagtt	ccatgagcgt	300
tggatacggg	aaacgcctga	caagctgggt	gaccgaatga	ttgaagcgta	ccctttacac	360
caatgcaaaa	gcagatcata	tggtaagaaa	agaggaaata	ctggcaaaaa	caggtaa	417

<210> 5040

<211> 432

<212> DNA

<213> B.fragilis

<400> 5040

aggaacggac	ggcgaagggg	tacatccggt	acatgcggga	aaaggaaatt	attgaaaagg	60
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agggcgactg	ctatgtatat	ggacagcgaa	aaatttgaga	attggatgga	gcgtatcatg	120
gaacgtttcg	accggacgga	gaagttgttg	gaaagagtac	tgaagaagag	caacgcgctg	180
gatggagagg	aggtactgga	taaccaggac	ctgtgcctgc	tgctgaagg	cggtattcgc	240
acattgcaac	gttaccgtgc	cattgggata	ctgccgtatt	tcactatcag	tggcaaggctc	300
ttctatcggg	tgaaagatgt	gcacgagttc	ctccgcaacc	agtttgccgc	tgtggaggaa	360
cgggctgcaa	aacggaagga	gaaggaagtc	cggaaagagg	aaaggcgcag	gaaaaaaggc	420
ttgtttccgt	aa					432

<210> 5041

<211> 708

<212> DNA

<213> B.fragilis

<400> 5041

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atgaatgcta	tgggttccga	agccgtacgt	ttccattccg	gacgggccgt	atgggaaata	120
tccgttggtc	tgaagtatca	tttcggatgc	agtaacggga	aacaccactt	tacaaaagtg	180
agagcttacg	accagcagga	ggtggatgtc	ttgaacgcaa	aaattaatga	acttcataca	240
caggccggta	aagatgccaa	ggcattgcag	gaggcagtgc	gaaaggtaac	ggaactggag	300
gccgcactgg	acaaatgccg	caaccaggaa	ccaaaaattg	tgaaagacac	cattgacaac	360
actaaaaaga	cgctggaatc	cgtcataact	ttccgccagg	gcaggacgac	agttgacaac	420
tcccaactcc	cgaatgtcga	acgtatcgct	acttatttaa	agaaccataa	gggagcaagt	480
gtactcatca	agggttatgc	ctctcctgag	ggaagcgtgg	aagttaacga	gcggatcgcc	540
cgacaaaagag	cggaggccgt	gaaaaaaatg	ctggtgggca	agtatggaat	tgcagaagaa	600
cggattgtag	ccgagggcca	gggagtaggg	aacatgttcg	aggagcccga	ctggaaccgg	660
gtaagcatct	gtacgatcaa	cgcgggaacg	gaatccagta	gccgttaa		708

<210> 5042

<211> 276

<212> DNA

<213> B.fragilis

<400> 5042

actgttatgc	gtgttttcaa	tcttttattg	ttgatctcca	tgttcagtc	cattccgctg	60
cccgtcagg	tgggcgaacg	ttatatagag	gtagccggta	cttccgagat	agaggtagtt	120
cctgacagga	ttcattatgt	tatcgaaata	aggcagtact	tcgaagtaga	gtttgatggc	180
gtatccgaac	cggaagaata	tcgcactaag	gttctcttta	ccaggataga	ggagcaattg	240
aagcaggttt	tgacaatagt	cggagtgcc	cggtag			276

<210> 5043

<211> 264

<212> DNA

<213> B.fragilis

<400> 5043

ccggtaaata	gattaataga	ttcaactcac	gataagatga	aagattatta	ctttattatg	60
aatgccgggg	taaaagccgg	aggggagatc	acccatgcgg	tattagaagg	gaaaattgta	120
tccgcaccga	aaggatacga	tgcttcacg	gggattgaag	cggccaggga	gaaactggct	180
tgcggaata	tccgtcagca	gatggaagaa	ttcggtatcg	aacttgagat	cgtgccggta	240
aatactgatt	ttttactacg	atga				264

<210> 5044

<211> 432

<212> DNA

<213> B.fragilis

<400> 5044

gaaggggctg	gagtgcggac	cgaacgacgg	caggatatgg	gctgtacgg	cgagcgaagt	60
gctggaggac	gggaaaatcc	gaacgggtgta	cgggaggatg	taataaaaaa	gcaaccgcc	120

gatttgggca	ttattaaaga	ggcttggcag	gttctattga	ttgcaaagat	aacggaaata	180
gttgggaacga	caaataattag	aatactacaa	atgcgcaact	atgtgttgcg	catttggtat	240
tattgcccga	ttgtctttaa	aatcaactct	tttaattggt	gttcagtcgg	aagttgcaac	300
tgggtatttg	aaacgaatat	ctgttcatcc	aatccgggtg	tgggtgtaccg	caccaacgca	360
tcgttcttgt	ccgttaccag	caaaatgccg	ataggcgggt	tatcgcccgg	ctccatcact	420
tcggctttat	aa					432

<210> 5045

<211> 297

<212> DNA

<213> B.fragilis

<400> 5045

aattcagata	tgactaaagc	agatattata	aaccgggtct	ctgaggagct	tggaatcgat	60
cgcaggaccg	ttggcctggg	aatcgagagt	ttcatgaaat	gcgtgaagga	tgcaactcggc	120
agagagagaa	ttgtattcct	gcgcggatcc	gggacctttt	ctttgaagaa	aagggcggca	180
aagaaggcac	agaatatcca	acagcacaca	accatatgca	tcccggctcg	caaggctccct	240
cattttaaac	cctcggagtc	tttcttgggt	ctccggaaaag	aagataatcg	aaaatag	297

<210> 5046

<211> 246

<212> DNA

<213> B.fragilis

<400> 5046

caagtccgta	tcaattgctc	tccctccata	cgggaagatt	caatgcccat	cttacgttcg	60
acctcctgca	tcaagttggt	aaagtacgtt	tctatcatgt	tattccttaa	ttatggggca	120
cgtgagtacc	ttcacgctac	ccgatttatt	tttatgcctc	gcttgattcg	atcgcaggtt	180
ttcctttcgg	ccctttacga	tgaaaaaact	tttcttcata	tcgaaaagac	cggagaaaag	240
ccatga						246

<210> 5047

<211> 1641

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1363), (1550), (1568), (1622)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5047

agaaatatga	ttacagcagt	tatcgctgaa	aagccttccg	tagcgaagga	tatagcaaac	60
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tgggcgttcg	gccatctcgt	ccagcttgcc	atgcccgaa	catacggcta	tgccggcttc	180
cggcgtgaga	acctgcccac	tctgccgcag	gagttcaagt	acatcccccg	ccagatacgg	240
gagggcaagg	agtacaagcc	cgaccccggc	gtactcaaac	agttgaaggt	catcagggag	300
gttttcgacc	gttcgatcgc	tatcgctcgt	gcgaccgatg	ccgggcgtga	gggtgaagcc	360
attcatcggt	acatctacaa	ttaccttggc	tgccgcaaac	cctgcctgcg	cctctggatc	420
tctcgcgtga	ccgaccgtgc	catccgggaa	gggctggaca	acctcaaaat	cggaaagcgac	480
tacgacaacc	tctaccgtgc	cgccgaagcc	cgtgctatcg	ccgactggga	gattggatta	540
aacgccaccc	aagctctcag	tatcgccgcc	gggcagggca	tctactccct	cggacgggta	600
cagacaccca	ccttgatgat	gatctgctcc	cgttatctgg	agaacaggga	tttcacccccg	660
cagacctatt	accggctgaa	ggtcacggct	gaaaaggacg	gcacgcctct	cgccgccatc	720
tctgaattgc	gttacgaaac	ccttcggcgc	gcaaatgccg	ctctcggcgc	tgtaaccgca	780
acggggacgg	tggaggttgc	cgacttgagc	cgcaggaggg	tgagccaaga	acctcccttg	840
ctctatgacc	tgaccgcctt	gcagaaaagag	gcgaacggca	ggtacggctt	ctcggcagac	900
aagaccctct	ccatcgccca	gtcgctttac	gagaagaagg	tgttgagcta	cccccgtaac	960
ggctcccgcg	acctatcgga	cgatgtgttc	gacgagatac	ccgatcgtat	cgccctgctg	1020

gagcgggtacc	cggtctttcgc	cgcccatgcc	gccgcctga	aaggagcttc	gctcaaccgc	1080
cgcagcgtgg	acgcagggaa	agtcaccgac	caccatgcgc	tcatcatcac	cgagtgtctg	1140
cccggcgagc	tgtccgcga	cgaacgcacg	gtatatgaca	tggtagccgc	ccgctgtctc	1200
gaagccttct	ccgcccgttg	cctcaaggac	gtaccaccg	tctctttcac	ggcagggaaac	1260
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gagcgggagg	aggacgacga	gggaacagcc	gctttgccga	ctntgcagac	cgacgaggct	1380
ttccccctgc	aatcggcgga	gtgtgtggag	aaacagacca	agccccgtcc	cctgcacacc	1440
gagagcagcc	tcctttcggc	gatggagcat	tgccgcaggg	agttgcagga	cgacgagctt	1500
cgagacagtt	tgaaagggaa	cggtatcggc	acgcccgcga	cccgtgcctn	catcatcgag	1560
accctctntg	cccgtgacta	cgtgcgcccc	gagaagaaag	agctcgtgcc	gacggacaag	1620
gngcttgcgt	gtatcaaata	g				1641

<210> 5048

<211> 1554

<212> DNA

<213> B.fragilis

<400> 5048

ttttttcaga	ttatggacga	acaaccggac	agcagccagc	agttaatgga	catcctgctc	60
gtcatggacg	agaaagggac	gcttcaagcc	gtcagcggag	taaaggacgg	cgagttacag	120
accaagaacc	cactggaggga	caacaacgac	ctcctgcggg	tggtatcgcca	cggcgatatg	180
ttttcaaatt	tcttttccaa	cctctggagc	cagttgaaag	atccgaccgc	cttccatttc	240
ttcctgtgtc	cggaagagca	ggtgcagcgg	gtacccgcgg	atttccggca	gcgggagagc	300
cggtcgggtca	agacaggtga	gccgctcctc	gcacagtagc	aggtgcagcc	gcccgtagcag	360
gcacagcagc	agacccaagc	cgggcagcag	caacagccgg	aggatgcgcc	gcagcagttc	420
gccgggcaga	ccgaacagaa	cccgcagtac	aagtaccgcc	cggaggacat	cgactggaac	480
agcctcgtcg	ccctcggcgt	gcagcgggaa	cagattgagg	gcaacgggat	gctcgaccag	540
atgctccggg	gcttcagac	cgacaagacc	gtccgggtgc	atttccactt	cgagggcatc	600
tcgcacagca	acgatagcca	gctctcgctc	aaaccgggca	cggacggcag	gctgaccgtt	660
tgcagcctcg	gcatcctcga	cccggagaag	atgcagaagc	agttcttcgg	ttacgacatc	720
accgactccg	acaagcaggt	gctccggcag	acgggctaca	tggggcaccc	ggcgactcgt	780
caccaaccgg	gcgggcgagc	aggtcgaagc	ccttgtcagc	cgcaacttca	agaccaacga	840
gctggtcgct	ttcccgtctt	ccaaggtcaa	tatcccggcg	gagaagaacg	ggcatacctt	900
caccccgggc	gaaatagccc	ggctcaaaca	gggcgaggcg	gtggtctgcc	agttcctttc	960
cagagccaag	gaggggggagc	aacccaagat	ctacccgggt	ccgttacagt	tcagcgcagc	1020
caagatgcag	ctcgaatttc	tcttcggcga	ccggggcaag	ctggcgatgg	atgcgtacaa	1080
gacgaacctg	aaacagaccg	ccaatcagga	ggtgccgaag	actttccgca	agcaggagct	1140
taccgagaag	tctcgctcgc	aactcgaagc	cgggggaacg	gtcaaggtct	ccggtctggt	1200
ggacaagaaa	ggaaaagcct	accaaggcta	ctcacatgg	aagcccggcg	agaagcccgc	1260
cttcatgttt	cccaaggact	acaaggcggc	actcgaagag	ggcggtgtca	agcccccggt	1320
ggagaacgag	gtgcaggtgg	cggtcaattc	cgagggcaag	accgtagagg	cgaccgcgaa	1380
cctgaaagaa	gccctgcaat	ccgcacagca	gcgccccacc	ggggagcaga	aacagcagca	1440
ggagcgcaag	caggagcaga	aagaggaacg	gaaacagtca	cagaagcagg	aacagcccga	1500
caagcccaag	cgcagccggg	gtgtccgcgc	ctgatttccc	ccgccactct	gtaa	1554

<210> 5049

<211> 498

<212> DNA

<213> B.fragilis

<400> 5049

aaacacattg	ttatgaaaca	gattaccttg	cacgtgtacc	aatccatcga	cggctgtccg	60
gtcatagcgg	acaagtgttt	caatgcggta	gtggacgcct	gtgcctacgt	gctgattgac	120
gaggaaaactt	acctgcgtat	ttacctgaat	gatcttgact	ggccgcttga	ggcaaaggag	180
accttggtcg	tgacgaacgg	ctgtatagac	ttgacagaga	cagaacgggt	acgttttgtc	240
aggggggaatg	tggtaacgga	actgcaacgg	ataaaggaga	atggcgacgg	tatggtggtg	300
gcttacggag	gagaaaccgg	agttttactc	ttggacaacg	ggctggcaga	tgaaatcgtg	360
atgacaaccg	tgccggtgct	ggtcggtaac	agtgagaagg	ggctggagtg	cggaccgaac	420
gacggcagga	tatgggctgt	acggctcgagc	gaagtgtctg	aggacgggaa	aatccgaacg	480

gtgtacggga ggatgtaa

498

<210> 5050

<211> 210

<212> DNA

<213> B.fragilis

<400> 5050

cacatgagcg	tggttgaaag	tatcaacttt	caattcgcac	aaaatatgac	atttcaaaat	60
ccggtggtag	aagaccatat	caatgaaata	aaattcgtca	ccgataagga	ttcttttttg	120
tctggcttcg	aaacagaagc	cgtttccgag	ttcgataatg	aagtctcgca	aatggtcgag	180
cagaagtgtt	tcgagttcct	tctcctttag				210

<210> 5051

<211> 492

<212> DNA

<213> B.fragilis

<400> 5051

gttatgaata	cactcacttc	tcaaattgaa	caattacaga	gtctcgcgca	cgagttactc	60
tatttaggtg	tggtgggtgc	tcttatttat	accgatcatt	tccgtcagtt	gaacaaagaa	120
gttttagaac	aatccgatgc	gttgatctct	cagcgcggtg	ctacttccga	agaggaggca	180
aacatttgtc	tggcactatt	gatgggttac	aatgcaacca	tctataatca	gggtgacaag	240
gaggagaaaa	agcaagttgt	tctcaatcgt	tggtgggacg	tgcttgacca	aacttctggt	300
actttattga	aatgccagtt	ggtgacttat	tgttatgggtg	gaggtgttga	agaggaattg	360
ggcaaagagg	ggccttcctt	tattaaaaag	gtggaaagaa	taagaaactt	tctgaagatt	420
aaaaagaggc	aattaattat	tttgagaaaa	ttgggaaaaa	aaatcctatt	ctctatgggg	480
aaagggaaat	aa					492

<210> 5052

<211> 525

<212> DNA

<213> B.fragilis

<400> 5052

atgtctgaac	aacagaagta	ttggtttgcc	gcccgtaccc	gagataaaca	agagtttgct	60
attcgtgact	ctcttgaaaa	attgaagact	gaacttgatc	tcaattacta	tcttcccact	120
cagtttgatc	tccggcagtt	gaaatatcgt	cgaaaacggg	tggaagtccc	tgttattaag	180
aatcttatct	tcatccaagc	taccaagcaa	gatgcttggtg	atatttctaa	taaatacaat	240
atccagcttt	tttttccgaa	agacttgctt	accagggcta	tgctgatagt	tcttgataaa	300
cagatgcagg	acttcatatt	tgtcatggat	ttagatccga	atggcgtcag	tttcgataat	360
gaccatttat	ctgtcggtag	caggggttcag	gtagttaaag	gtgatttctg	tggtgtcgag	420
ggcgaacttg	ccagcgaggc	caacaaaact	tatgttggtta	ttcgtattgc	cggtgtattg	480
agcgccagtg	tcaaagttcc	taaaagttat	ttacgtgtca	tttaa		525

<210> 5053

<211> 369

<212> DNA

<213> B.fragilis

<400> 5053

cattatggaa	gaaaaaaaagt	agttatctca	ttgaatgata	acttagtaac	catcgaagta	60
aatggaaaag	taatctttgc	gggtaaagcc	gacttgcaat	tcagcctcaa	tcaaaaaggtt	120
agagaaccac	tacgcatcac	aaaaggcaaa	ggaaagctaa	tgagggcact	taccgaaagc	180
tttatcaaag	gcggaatcaa	cagcatggaa	aacagaccca	ttgaagaact	acaggaaaca	240
ataaaagaat	atctcacctt	tgaatatcag	cgcaaaggca	ttgctacaga	gccaataaaa	300
cgttcttttc	tatcagagct	gaaaaaatat	gccagagcat	tccggaaaaa	acgagatgaa	360
agcgaataa						369

<210> 5054
 <211> 927
 <212> DNA
 <213> B.fragilis

<400> 5054
 acatctttat tattaactca aaaagcaata cttatgaaga aaaccatctt cttgattttg 60
 tgcattttat gttctcttgg agccatggca caaaagaaat caatcacagg tgtggttacg 120
 gatgctagcg gtgaatcagt catcggagcg agtggtgtcg aagtcggtac caccaatggg 180
 gtaattaccg atattagcgg caagttttaca ttaatgggtcg atcctaacgg aaagatcaaaa 240
 gtttcttatg ttgggtatca gcctcaggta ctcgatgtaa agggcaaaaa ttctttcaat 300
 attaaattga aagaagactc tgaaatgttg gatgaagtag tagtcacagg atatgggtggc 360
 aaacagttgc gtaccaaagt gaccaattca attggcaaaag taaaggaaga tgttctacaa 420
 aaaggactct ttccaatcc ggcacaagct ttgtctgggg cggtatcggg tgtacgtggt 480
 cttcagacct caggatgatcc aggagctact cctactataa tcctacgtgg tggtagcgat 540
 tataacggaa cgggatctcc attagtggtta gtagacggac aagtcctggt aagtcgtagt 600
 gatatcaatc ctgaggatat tgagtcaatg gaagtcctaa aagacgccgg tggcactgct 660
 atttatgggtg ctgcgcgctaa taatgggtgta atcttagtta ctactaaacg tggtaaagaa 720
 ggtaaagggtg aggtcagtggt aaaggctaaa gtcgggtatca actattacaa taatccttat 780
 gaatttatga atgcccgcgga ttatatctat tggatgcgta cggcatatca acgttctggc 840
 caaatctata aagattccaa aggtaattgg gttggtacag cagatatgaa tagtctaaat 900
 aatgcaacct ccctatggta cgggtaa 927

<210> 5055
 <211> 807
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (55), (111), (202)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5055
 aattcaaata agctggttca cccggatggt catttcgttt ttccggtagt aaaanacggg 60
 agaagcgatg actacattgt agaatggaga aaattgggtg taaacaatcc ntattttacc 120
 atcaatcatt ggctgaacga aataaatgca gaaaatgcac aggcggtaat ctacacccaaa 180
 gagagtgatg agatcatgaa anagctcagc cttaaattca gcgagggcgg atttaagatt 240
 acactcctct ggctgccgga aaagatgcaa caggcttggtg ccaacaagtt attgaaactg 300
 ctggaagaac cacccgaaaa gacaatcttc cttttggtt cggaggctcc cgatttaatt 360
 ctccaaacga tattgagccg cacgcaacgc ttcaatctac gtaaaattga ggaagagtgt 420
 atggccgagg ctttacaagg caaatacggg gtccagcagg caaccagtat ttcgatcgcc 480
 cacctagcca acggaaactt tatcaaagcc ctcgagacaa ttacactgaa tgaagagaat 540
 cagttgtttt tcgaactgtt tgtcagtttg atgcgactct cttaccaacg gaaaatccgg 600
 gaaatgaaat tatggagtga acaagtggca ggcattgggac gcgaacgcca gaaaaatttt 660
 ctggaatact gccacaaaga acgtttcaaa tccttgcccg gacgtccggg caatgacttc 720
 cggaactata tgacattaga agaacagaac ttcgctacac ggtttgccgt cttcaccacg 780
 gggctgggag gatcgacgct ggtgtaa 807

<210> 5056
 <211> 222
 <212> DNA
 <213> B.fragilis

<400> 5056
 ctgaaaatag ccataaaaaag cataaaagta tgttcattcg tatattcatt ccgaagaaaa 60
 ctaaacagac gcaaaattag acagttttca ttggctgctc aataccttaa aataggtaat 120
 atgccgataa tgctttacta tccttttcaa aaaggactaa taattcacgc taggaatgga 180
 aattcttatc atggcactaa atctgtagct tattttcatt aa 222

<210> 5057
 <211> 1680
 <212> DNA
 <213> B.fragilis

<400> 5057
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 atctttatct ccagcagctg cgttgaagat gttacagaat caaccaaaga accaacacgg 120
 tatacagcaa acgatataaa atcatattct gacctgtttg atgtgttttg gaatacaatg 180
 aatcaaaaat ataattatct ttacgagcag agcagtttta attgggaaac ggtatataat 240
 gaatatgctc cgaaattcaa aaaattgaaa acgttcaaca gagataagca gtatagcaaa 300
 gcggaaatct cagaagattg taataaagcg atagaatatt ttacagaaat catagatccc 360
 atcatagaca ggcacttcta tgtaaagatt tcacttcctg tatcgcatag ttttatcaga 420
 aatgtctact ttcatgggtg tatgaagagt aaagaaaaga tatataccta cccttttgaa 480
 ctcaagtatg aatacatgag atctaaaata caatctgaaa caggagtatt cggacaggcc 540
 aacgatatgt taggtggttt cttatcagac aatcctgaca tatattactt cagctttaaa 600
 tcatttacia taagtaatca ttatatattg tcatttggca gcgaatactt ggttatagac 660
 gataaaagtc cgtactatct aacagaaaaa gagatcagag atactgtcga agcgaataaa 720
 attaaagacc ccgcagtaaa aagtgtctcta attgagaaat cgatagaata catgaataag 780
 ttttaactct tcatgaggtc tgaaatcgca caagatgcaa taaaaaaaat agcggatttt 840
 aatcaatcag aaaatccaga caatagtttt attgaggcat tatccaaagc aaaagaaaat 900
 gcgcctgata taaatattga attatcacag ttaagtgttt tgaaagaatt tagattaaat 960
 cctaattata ctacatgggt taaacagcgc tcaaccgaac atttacaatt agcatgtgaa 1020
 tataccgtct ttctatcaaa catagataat gtcacacaac atcaatataa aatagatttc 1080
 tatagaaact ttttggtagc cctcaaagtt ggaaaaataa aaaagataat actggatctt 1140
 agaggaaatg gtggcggtat ggtacttgat gcaagaacat ttacagatcg ttttatcact 1200
 aaagatgcta ttttggcta ccaaagattt aaggaagata acaatccatt cagttatacc 1260
 ccatggacac cttgcatgac aaaaacaaca ggcattggga taaaaaagga aataccgata 1320
 gttattcttt tagataacaa tagtgctagt atgtccgaaa tcagcacttt aatgttaaaa 1380
 agccaaggaa aacatgtcac agtcgtagga ggctatagcg ctgggtgcaac tgctggattg 1440
 ggagattcgg atcaattcaa cggaggaata agaggaaagg ttagtgacta tttagagttt 1500
 tatatgcctt tacttgcaat gcaggatgca acccatactg taatagaagg aataggtatc 1560
 aaaccggacc tactagtaga ccactaaca gaagatgaag ttcgtgaaat ggctctttca 1620
 ccttttactc atattgatcg tacattaaaa caggcaatag aagtcttgag caataattaa 1680

<210> 5058
 <211> 516
 <212> DNA
 <213> B.fragilis

<400> 5058
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 tttatgcagt cttcttttgc tgcaccgtcg atgagtgtcta actctataac caacgtgttg 120
 gctataagtg actatgaagg cacttatagc ggtacgatgg ataatatcat aatgagaggt 180
 aagccttatg aatcacgggc tgcaacttat aaaatagagg gtggccgttt gaaatgtgat 240
 tttccgcaga taggtagtat gccgggtaca attactatct ctttggctgt ggaagtagat 300
 gaggaaaccg gcgagattac agcttacaac ggggacgaag caggcacttt gtcgcttccg 360
 ttgggaataa aggtcaaatt gtatttggac gacttgagag atgcaaagat tacggataat 420
 ggtagctcta aacaaataga atttacactg gacgtttccg gtacattctt gggagctaat 480
 ttccctgcat ctgtgcattt tgtaggtaca aaatag 516

<210> 5059
 <211> 255
 <212> DNA
 <213> B.fragilis

<400> 5059
 actctaaaaa aacgacctat gagaaaacta aaaaagccat attctcaaaa ttggagaggt 60

2004

ctgtctgcca	aatggctgtt	tattttgtct	actgttttag	ggattatagc	agggacttgt	120
ttttggattt	ttattttctg	ctgtggaaat	gaggagtgtt	ttttaaatta	tgatccattg	180
ccggaaatgt	ttattgggtg	cgtaatagga	gcgtttttat	atgttattat	atgggggatg	240
acgtctgata	tgtga					255

<210> 5060
 <211> 1494
 <212> DNA
 <213> B.fragilis

<400> 5060						
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gcagccaatg	tgatctatgc	cgataatgaa	gctttgcgaa	atccccaata	tgccattacg	180
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gatgccggat	atagtaatct	tcaacaggga	ctgcagcagg	aaacgcctgg	acttaacata	480
cagaaggtgg	ggttcggtaa	tgaaatctcc	atgcaagggt	tgacgcacg	ccacgtgttg	540
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gactgggtta	gtgtgacagg	aagtctgcac	gctgattttt	acgatcgctt	caaacgccat	1260
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gttacgagca	attacttcaa	cggacacagc	ttaatatgtg	gtatggagca	tacgtcggat	1380
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<210> 5061
 <211> 183
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (13), (15)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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tga						183

<210> 5062
 <211> 198
 <212> DNA
 <213> B.fragilis

<400> 5062

2005

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gtatctgtag	aagaaaccaa	taaaagaaaa	tcattttataa	actatataaa	aagaaaactg	180
aatgtataa	taaaataa					198

<210> 5063
 <211> 2796
 <212> DNA
 <213> B.fragilis

<400> 5063						
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tgcgttcttt	ccgaagattc	gatagagaga	agtttgccct	atgcaagcgt	ggtcggtttg	180
gaaggaaagg	attccgcttt	tgtaaagggg	atggcgagtg	atgcaaagtg	gagcttcaag	240
ttggagtta	taccacaaaa	gcgaatggaa	tacttggtgc	ggatatctta	tatcgggtatg	300
tcaactatct	ttcgggaagt	agatccgcat	atgatggata	ttgattgtgg	acataattctg	360
atggaaaagt	gtatcaaaact	ggccgaagt	ctgggtgactg	ctcccgtaa	agagatagat	420
atggcagggg	atacgaccgt	aattaatgct	gatgcctacc	ggactccaga	aggctcaaat	480
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aaaggagata	acgaagtatg	ttggaacctc	attctgtcat	ggagttttct	caaatataag	2640
aaagctgaat	tttctgtgta	ttgggcggat	cattctcagtc	agaaaaagag	ctatagccgt	2700
aacgtttacat	cccatggatt	gtccggaacga	tatactcagc	agatcggcag	ttatttcatt	2760
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<210> 5064
 <211> 837
 <212> DNA
 <213> B.fragilis

<400> 5064
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 cgactggatc gtggagacgc cagtattctg gagtacaata aggttcagtt gaatctttcc 180
 accgtgcaag gggagatgtc aagaatagaa gtggagagga acgctcttct ttccgaactc 240
 aaacgattga atgggtggtat ggatgtgatt tttgaggcga gcaactattc tccggcttcg 300
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 tacgtaaagc aacagataga ggtcagtaag gagcaggtta agctcggtaa ggccatgaca 420
 cttccgaaat tttcagcccg ttattcgctg gaaaggaccc ttggacaaaa atatcaggga 480
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 tccttggtta actatatcgt tgagataggc ctgtattatg acacagttaa tcagacgttg 780
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<210> 5065
 <211> 750
 <212> DNA
 <213> B.fragilis

<400> 5065
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 agtttaagtg ccggtctatc caaaagcatt ttgaatagcg atgtttctaa tttggtcaat 180
 acacgttatg ataccaaaac aggtgttgca acaagggtaa atcttgaata taattttttt 240
 aaagatttta tagtaggaac agggctggga ttcatacaaa agaattatga atacaaaaag 300
 acggataata ttacaggaac acatacactg tataaaaaaca actttatgga tataccgtta 360
 aatgtaggct tgtatctttt taataaccct cataaagaaa atggtatatg gctaaaagtt 420
 caagggtggcg tcttctatga gtacttcaca agaatgcac ggaaaggcga atatccaatc 480
 tttgcacaat tacaagaaga tggttcctac atcaaagctc aggtaaatga aacatacgat 540
 tttaagagaa atgaaaacaa cttgaaaaga aacctattcg ggatagaggg gacaggagaa 600
 gttggctatt ctttcaatag gatcgacggt tttgcttcat atacctatca gtatggctct 660
 accgatatat acaaagcaaa aacttcttct aatcgtaaat caaaaagaat ctcaaacatc 720
 atatcggttag gcggtgccta taaattttta 750

<210> 5066
 <211> 687
 <212> DNA
 <213> B.fragilis

<400> 5066
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 agcgatgaaa agataacaca ggagccacct tcccagacat atgttaaaaa ggcgaaagag 180
 attcttgcag gagatattgt actctctacc agagcaacaa tgaatggtgt ggacaagaca 240
 ttgttgaaga gtggttgccc aaccaaattt aacttttctt ggctgagga cggtatgatg 300
 atactgaacc tgagtgattt cagcgtaggc gctatgccat ttgccattag cttcaaattg 360
 gctacgaaaa tcatgcagct caacagttgg gaacaggatg aatatcccgg agatggatgg 420
 attaagtttg ttggtacaga ttgtaattgt acgacttccg gtgatgatgc cgaagataat 480
 caagaaggga gcgagcgag agtagatggc tatttgaacg tgaataccaa ccaaataagag 540
 tttattgtag attacaatat gatgaatgtc cgcaactgaaa cattttttgca aacaatcgat 600
 aaaaccgta tcgatcgctt taaggaagag tttgcacaat acgagaaaga tttggaagag 660
 gctaagaaaag accaaggaaa ggccctaa 687

<210> 5067
 <211> 1428
 <212> DNA
 <213> B.fragilis

<400> 5067
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 agtgagttga agacaatatt gcaacagaaa ggataccaat ttaatgaaca gggtaattta 180
 ctgttggatg atttagctaa taatactact acttttagatt tatcggaac aaaactttct 240
 aacttgtcgg aacttgatat tcttcccaat ctgacagaag taaaattgtc agataacgat 300
 tatggtcctg tattcgactt ttcaaaactg cccaacaga ttacaggaat tgatctgact 360
 ggtaatgata tttatgatta tgataatctt gttaacgttg tagtagaaga aaatggtaat 420
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 aagaatgatg ggtacaattg gagaaaagct cttaagaaga agtcttag 1428

<210> 5068
 <211> 234
 <212> DNA
 <213> B.fragilis

<400> 5068
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 tatgccacta ctatttattg gtatggcgat ccggaggcac aggtatttgg aacttcaggt 180
 attgaagaag cccgcgggca gttgctgcct gctgttgagg ctccggcaga ctga 234

<210> 5069
 <211> 1185
 <212> DNA
 <213> B.fragilis

<400> 5069
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 tacgcgggca atctggatat cagccagacg aaagtcatta cgggtacggt gaccgaaaag 180
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catcagattt	cagtatcgag	tggtagctgat	aaatcacgta	ctttcttcaa	cctgggttat	1140
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<210> 5070

<211> 192

<212> DNA

<213> B.fragilis

<400> 5070

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ggttattaca	taaaagggtt	cggaggcaaa	tataacaatt	tccctccgga	atctcccacc	180
tgcttggttt	aa					192

<210> 5071

<211> 1182

<212> DNA

<213> B.fragilis

<400> 5071

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cgtggcggtg	gaaaaaccac	tttctgctt	caatacgcca	aggagaagtt	cggaaaccgac	180
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gcaaaaatta	agaataacct	cggagtgcg	tatgctttgc	acaaggcaga	aataggtcgt	1140
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<210> 5072

<211> 1479

<212> DNA

<213> B.fragilis

<400> 5072

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ggactggact	ggccacgcac	caaagcaacc	actcctgcag	gtatccggcg	acagaaagaa	180
gaactgatcg	atatactcga	ccgcttgaaa	gaggccaact	tcaatacggg	acttttccag	240

acacgtaccc	gtggtgatgt	gctttatcgt	tgggacatcg	aacccttcaa	ctccatactg	300
acaggaaaaa	ccggaggcga	tcccggatac	gatccgttgg	ccttcgccgt	tgaagagtgc	360
cacaaacgag	gcatggaatg	ccatgcctgg	atggtgacca	tccccttggg	aggcaaaaaa	420
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<210> 5073

<211> 906

<212> DNA

<213> B.fragilis

<400> 5073

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<210> 5074

<211> 2307

<212> DNA

<213> B.fragilis

<400> 5074

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<210> 5075

<211> 849

<212> DNA

<213> B.fragilis

<400> 5075

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<210> 5076

<211> 858

<212> DNA

<213> B.fragilis

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<210> 5078

<211> 645

<212> DNA

<213> B.fragilis

<400> 5078

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<210> 5079

<211> 846

<212> DNA

<213> B.fragilis

<400> 5079

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<210> 5080

<211> 1173

<212> DNA

<213> B.fragilis

<400> 5080

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2013

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<210> 5081

<211> 375

<212> DNA

<213> B.fragilis

<400> 5081

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<210> 5082

<211> 1239

<212> DNA

<213> B.fragilis

<400> 5082

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1239

<210> 5083

<211> 309

<212> DNA

<213> B.fragilis

<400> 5083

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aacgcacggg	ccaaaccgac	acgttgctgc	atacctccc	acagttcgcc	gaccatctgg	300
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<210> 5084

<211> 579

<212> DNA

<213> B.fragilis

<400> 5084

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<210> 5085

<211> 1197

<212> DNA

<213> B.fragilis

<400> 5085

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<210> 5086
 <211> 3582
 <212> DNA
 <213> B.fragilis

<400> 5086

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2016

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<211> 846

<212> DNA

<213> B.fragilis

<220>

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<222>

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<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5087

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<210> 5088

<211> 843

<212> DNA

<213> B.fragilis

<400> 5088

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<210> 5089

<211> 1854
 <212> DNA
 <213> B.fragilis

<400> 5089

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<210> 5090
 <211> 1710
 <212> DNA
 <213> B.fragilis

<400> 5090

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2018

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<210> 5091

<211> 708

<212> DNA

<213> B.fragilis

<400> 5091

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<210> 5092

<211> 238

<212> DNA

<213> B.fragilis

<400> 5092

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<210> 5093

<211> 2157

<212> DNA

<213> B.fragilis

<400> 5093

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2019

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<210> 5094

<211> 1194

<212> DNA

<213> B.fragilis

<400> 5094

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gttgtttatt	tattggccga	taatgtgacg	ttaggaataa	aggctctatt	cccttttatt	180
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cgccctattt	actttaataa	caggaaaaatg	tatatacccc	aaaccatcaa	tatgcgttta	540
gggaacaaaag	tgatgggaaa	atctcctgtc	tacgtcgtgg	ttgatacggg	taaaaatgtg	600
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<210> 5095

<211> 915

<212> DNA

<213> B.fragilis

<400> 5095

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tctctggaat catcatcggc taaaatagaa ttacttaact tccaaaatga cttattgoga 180
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<210> 5096

<211> 252

<212> DNA

<213> B.fragilis

<400> 5096

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ggagtgcagc aggagggttat tgaccattcg gatgggtgta ttgagattcc ccaatatggc 180
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<210> 5097

<211> 243

<212> DNA

<213> B.fragilis

<400> 5097

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aacgtatcaa agcgcaccaa acagactacg tatcattcat tctttattta ctgcaccc 180
gtttgggtga tatacccaaa accactacct ttgcaccctc aaaacccaaa caaaagcgac 240
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<210> 5098

<211> 423

<212> DNA

<213> B.fragilis

<400> 5098

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aaaccgaac atctgaatgc gggacaacgg acacaggag ggcacatctt tactttagcc 180
gatctggcac ttgcagcagc agctaactca catggcacat tggccttttc gctctcttc 240
aatatcactt tcttgcgcg cagcgcccc ggagacacac tctatgccga agcacgcgaa 300
cgctataccg gacgcagcac aggttattat cagatagatg taaccgatca ggaaggcaga 360
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tga 423

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<210> 5099

<211> 915
 <212> DNA
 <213> B.fragilis

<400> 5099

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gatgcgttta	agtccggtga	gcacgtcatg	tacgaacttt	atttcaactg	gaaattcatt	240
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gcctatcggg	tcaattttatt	ggccatttagc	agtaaagagg	ccgactttctt	ctttaagatg	360
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<210> 5100
 <211> 963
 <212> DNA
 <213> B.fragilis

<400> 5100

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<210> 5101
 <211> 1488
 <212> DNA
 <213> B.fragilis

<400> 5101

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gccacaaaag	actgggcaac	cagtgacttg	atccgtaacg	aactgactgc	attgggattc	1440
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<210> 5102

<211> 645

<212> DNA

<213> B.fragilis

<400> 5102

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<210> 5103

<211> 189

<212> DNA

<213> B.fragilis

<400> 5103

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aaaaatcttt	acctaatgta	aatcacttg	aaaatttttt	attaccttaa	atctttatct	180
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<210> 5104

<211> 222

<212> DNA

<213> B.fragilis

<400> 5104

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tggagtctgt	ctctgaagt	gtggagctta	ctttatatac	tgatgttcat	catttgctgt	180
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<210> 5105
 <211> 1359
 <212> DNA
 <213> B.fragilis

<400> 5105
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 gcacaacaac acgcgacagg caagaagaca gagatgagtg ttgacctgaa tctgtagtt 180
 gtaacaggta cgggtacaca ccaaaggctc aaaaacacac cggcaccggg ggaagtagta 240
 accgccaatg aaataaagaa agccggcatc acagactttc agcaggcaat gaccatgctg 300
 gttcctttctc tttcgtttctc taccaactca atgggatctt acctgatgat gaacggactc 360
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 aatatcgacc tctcacgcat tgatatgagc cgtgtgaaac gcatcgaagt gctggatggg 480
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<210> 5106
 <211> 234
 <212> DNA
 <213> B.fragilis

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 aaaaacatca atgaacaaaa gatgcttact gaccatcctc ttgggaggat gcgcggcaat 180
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<210> 5107
 <211> 630
 <212> DNA
 <213> B.fragilis

<400> 5107
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<210> 5108
 <211> 207
 <212> DNA
 <213> B.fragilis

<400> 5108
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 aaaaccaagg ccctcaattt attgattttt tcccacgaaa ttccaaaaac ttctttgaag 180
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<210> 5109
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 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (1708), (1755), (1761)
 <223> Identity of nucleotide sequences at the above locations are unknown.

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 gggcttagtt cttttctgga aaaagacctg aacaaagaat atcccaaacc taagtcttat 180
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 gaagagatga accaagctaa actacgattc tttaccaatg tgagccatga gtttcgact 720
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 aaaggagaaa taagcatatt aacctctacc acaccggatc aggttggtat tgcagttaag 1140
 gattccggga atggcattag taaagaagaa caggaacgga tatttgatcg tttttatcag 1200
 gcggacaatc ggaataaagc gattcatggt ggcaactggt tggacttgc attaacgaaa 1260
 agtatcattc agctacatca tgggtacaatt gaggtagaaa gtgagttaaa tgaaggaagc 1320
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 tttctggaat ctccggaaaa ggaacctatg gtacaagaga ataccatacc ggatgagaat 1440
 tttatgaaaa aggatgattc tacattcgaa actcccttga tagatgaacg ggaagggaaa 1500
 cggaaagtat tattggtaga agataatgtg gagcttttgc aggtactcaa agaaatattt 1560
 tcatcacttt atcaggtggt gacggctgct aatggcgagg agggactgaa acaggctttt 1620
 gcagaagtcc ccgatttgat agtgagtgat gttatgatgc cggtaatgac aggaacggag 1680
 atgtgtctga aaataaagaa taacatanac ctgtgtcaca ttccggttgt gttgttgaca 1740
 gcaattgaca ctgtngatca naatatagaa gggctacccc gtggagcaga cgatttatc 1800
 acccaacctt ttaatgcaaa aaacttaata accccgtgca aataa 1845

<210> 5110
 <211> 438
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (103)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5110
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 tatgtgcccg ctccagagcg ttccagcttc gtcattgaca agnaggatac gcagaggggtg 120
 gccatactcg acgaaaagga acgctcttac ggacagaagg aaaggatcag ggaggctatc 180
 gcgaaacgta ccccgctgga tctgggactg aaggacaaga attccggtgt ggagttcgag 240
 gtcggaaata tcttcatcga cggggatata ctgctgttgc gcatgaccct gataaaccgc 300
 acacagatcg gttatacgac ggatttcatg cggttctaca tccaggatgc caagatccgc 360
 aaaaagacgg cggtagacga gtcgagcag aacatcctgt tcactttcga ttataccgga 420
 agaagtaccg gcacatga 438

<210> 5111
 <211> 183
 <212> DNA
 <213> B.fragilis

<400> 5111
 atggaaactg cgtttgccgg ttatgggatg gatccggatg ccaaagccgc tgctcttcc 60
 gaacctgtct ttccaggggac aggcgagcgg gatcttgctg gatactccgt accgggagag 120
 tatatcccgg tagttttcca gtgtctccag gcgttcgcac ctgtccagtg ccttgctcag 180
 tag 183

<210> 5112
 <211> 582
 <212> DNA
 <213> B.fragilis

<400> 5112
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 tgccctcccct tcaatggctc aaacggcgga aaggaaactac tcgacaaggc actggacagg 120
 tgcgaacgcc tggagacact ggaaaactac cgggatatac tctcccggta cggagtatcc 180
 gacaagatcc cgctcgcttg tcccctgaaa gacaggttca ggaagagcag cggctttggc 240
 atccggatcc atcccataac cggcaaaccg agtttccatt caggatttga catggccgta 300
 ggactggcag ccccggttta cgccaccgcc tcgggaacgg tttctttcgc gggaaaggaaa 360
 ggggggtacg gaagatgctg cattatacgc cattcttatg gctttgaaac gctgtatgcc 420
 catctggccg cctattacac caccgaaggc caaaaagtgc acaaaggggc tgtaatcgcg 480
 tttgccggga gcacgggtaa aagtacgggc taccacctgc attatgaaat cagaaaaaac 540
 ggtaaaccta taaaaccata ctggtatggc tatgacgatt ga 582

<210> 5113
 <211> 354
 <212> DNA
 <213> B.fragilis

<400> 5113
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 tccgcaaaaa gacggcggtg cagcagctcg agcagaacat cctgttccat ttcgattata 120
 ccggaagaag tacccggcaca tgaaagccgg acatttactg tggccatgaa caagttcacc 180
 atcccggata agaaacggct tatcatcgag atccaggaga ggaacggcgg ccggcatttc 240
 ctgtacaagc tgaagaacaa gtcgctgctg acagcagagg aggtattcag aagcagaaag 300
 caacaggaaa cggaggatga agccgacaaa atattaagga ggatagcccc atga 354

<210> 5114
 <211> 354
 <212> DNA

<213> B.fragilis

<400> 5114

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atcgcatcgg	acgggctgaa	ggcctgccc	aaagaccttg	ccttccttga	gaaatacggg	120
ctgaagaacc	tatatttctt	ttccctggaa	tacgcgatgg	aagggacgga	tacgacggtt	180
ctcgacagta	aggcgaaaagg	gttgatcaga	tggtagctct	attcgacgga	ttttcccctg	240
ctgcggcaga	agtatgaacg	ggaaggaaaa	gcggagctga	tgaaatgcct	gtacctggaa	300
gagagatatt	tccgcaagtt	cctggaatca	accggacagg	aggagggatt	atga	354

<210> 5115

<211> 195

<212> DNA

<213> B.fragilis

<400> 5115

gttgtggcag	cggctccttc	cagccccgtg	gtgaagacga	tgtctgactc	attgggtggag	60
cgaaaagggg	cttccgatga	acaacaccga	aaattacttt	ataaacgtta	tggcagactg	120
actttccgcg	aaggtaaaat	cattttcctg	aatagccgtt	gtccggcatt	ctatgtgaag	180
aaggaagaga	aataa					195

<210> 5116

<211> 1548

<212> DNA

<213> B.fragilis

<400> 5116

acctctaaat	attgtacgtc	tatggatagc	attctttttt	ggcttggttc	gtttgcctct	60
gttctggctc	tctgttttgc	gctctatttt	cataaaca	tgatgaagga	gagcgaaggt	120
actccacaaa	tgattaagat	tgccgctgcc	gtgcgtcggg	gcgctatgtc	ttatctgaaa	180
cagcagtata	aaatcggttg	ctgggtat	ctcggactgg	tgattctatt	ctctgtaatg	240
gcttatgggt	ttcaggtgca	gaatgcctgg	gtaccgatag	ctttcctgac	cggaggtttc	300
ttttccgggtc	tttcaggctt	tttgggaatg	aaaacagcta	cttacgcata	ggcgcgtagc	360
gctaattgctg	ctcgtacgtc	attgaatgcc	ggattgcgaa	tagccttccg	aagcggagct	420
gtgatgggac	tggtagtggg	cggcctggga	ctgctcgaca	tctctttttg	gtatctgttg	480
ctcaattggg	cgatacctgc	cgatgtgctg	acaccactc	ataaactctg	tatcatcact	540
actacaatgc	tgacttttgg	tatgggcgcc	agcacgcagg	cgctttttgc	ccgtgtggga	600
ggtggcattt	atacaaaggc	tgccgatgtg	ggagccgatc	ttgtggggaa	agttgaggcc	660
ggtattcccg	aggacgatcc	gcgtaaccct	gccaccattg	ctgataatgt	aggtgataat	720
gtgggtgacg	tggcaggaat	gggtgccgat	ttatacagag	catattgcgg	ttccattttg	780
gcaacggctg	ctttgggtgc	ggccgccttt	attcatacgg	gcgatacggg	tatgcagttt	840
aaagctgtaa	tagctccgat	gttgattgcc	gctatcggca	tcattctttc	tataatcggt	900
atttttttcag	tacgtactaa	agagaatgct	accatgaaag	atctgcttgg	ttcgtctggc	960
tgggggacaa	acctgagttc	ggctttgatt	gtagcagcca	ctttttttat	cttgtggtta	1020
ttacaattgg	acaattggat	gtggatttct	tgtgcggtag	ttgtaggatt	ggttgtgggt	1080
attgttatcg	gccgttcgac	ggaatattat	acttcccaat	cttaccggcc	tactcagaaa	1140
ttgagtga	gtggcaaaac	gggtcctgcc	acagtcata	tttcgggtat	aggactcggc	1200
atgttgtcca	cagctattcc	tgtgggtggc	gtggtaatcg	gtattattgc	ttcctatctg	1260
ttggcttccg	gttttgattt	caataatgtg	ggaatgggac	tttacggcat	cggatttgct	1320
gctgtcggta	tgctttctac	attgggcatt	acgcttgcta	cggatgctta	tggtccgata	1380
gccgacaatg	ccggtggcaa	tgccggagatg	tcctctttgg	gtaaagaggt	gcgtaaaccg	1440
accgatgcgc	tcgattcgtt	gggaaataca	acggcagcta	ccggaaaagg	ttttgccatt	1500
ggctcagctg	ctcttacgga	gctggcattg	ctggcttctt	atatttga		1548

<210> 5117

<211> 900

<212> DNA

<213> B.fragilis

<400> 5117

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tttaacttct	acattgctaa	cgacctggga	cgtaacggct	actacgatca	aaagccgatt	120
gccgaattaa	tgggaactat	gggtgaggaa	ataggaccgg	aatttggtgt	ggctgccgga	180
gatattccatc	atttcgaagg	agtacgcagc	gtgaacgacc	cgctctggat	gaccaacttt	240
gaactgattt	acagtcaccc	ggaactcatg	atcgactggg	atcccgtaact	gggaaaccac	300
gaataccggg	gcaacacaca	agctgtactg	gactacagcg	gagtgagccg	ccgctggacc	360
atgcctgccc	gttactacac	caagacattc	ggagaaaaag	gagccaccgt	ccgcatcgtc	420
tggatagata	ctgctcctct	gatcgataaa	taccgtaacg	aaagcgcaac	ctatcccgat	480
gcatgtcatc	aggatatgaa	cggacagttg	gcctggctgg	actcgggtgt	gactgttgcc	540
aaagaagact	gggtgatcgt	tgccgggcat	catccgatct	atgccgaaac	cccgaagac	600
cagagcgaac	gcagcgactt	acagagccgc	ctcgatccta	ttctgagaaa	gcataaagta	660
gatatgtaca	tttgccggaca	tatccacaac	ttccaacaca	tccgcgtacc	gggaagcgac	720
atcgactata	tcgtaaactc	tgccggatca	ctggcacgca	aggtgaaacc	gattgagggg	780
actcagttct	gcaaccccg	acccggcttc	tcagtctgct	ccattgataa	acaggaactg	840
aacctgcgga	tgatcgataa	aaaagggaat	atactttata	cggtaaccgc	gaaaaaataa	900

<210> 5118

<211> 492

<212> DNA

<213> B.fragilis

<400> 5118

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acaccgaaga	atgaggtggt	aaccattccg	aactcgttta	tcattgtcatc	ccatacagtg	120
aactatagcg	cttcggcccg	cgaatacggg	ctgattattc	actcgggaagt	gaccatcgga	180
tatgatgttc	cctggcgctca	ggttcatcag	ctattgatag	aagctgcctt	gaatactccc	240
gggggtgattg	acgatccg	tccttttgtg	cttgaaactt	cgttgagtga	ctgggtatccg	300
gtttatcaaa	tcaatgctta	tatccgtgag	gcggataaat	tggctcagat	atattcggac	360
ctgcacgaga	atattcagga	tcgctttaat	gaagcgggca	tcgaaatcat	gtgcctcac	420
tatatggcta	tgcgtgacgg	caatgagtct	acgattccca	aagatgattt	gaggcccaag	480
actgataaat	aa					492

<210> 5119

<211> 1002

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (810), (911), (925)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5119

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tctaattatt	ttccagaagc	tctgcaagct	cagcatagct	attttaaact	cataccact	180
tcctcggaag	gaggagatcg	cccacgaccc	gatcattcac	taaagaaaca	acaaatactt	240
aacattatga	aatcatttta	aatcatgctc	atcacgggat	tatccgtaat	gactctgagt	300
tgtagcgaga	aaacgcagac	agaaattcct	gaaacagaat	tgaaaaacat	tagttgtagc	360
acccaattag	tactcattc	atctgctcaa	accagaggag	cggcaccaac	aaccttgaat	420
gaaaacgatt	tcgtgcttta	tgcattcaaa	aaaaacgggtg	aaggtaactt	tagttatgaa	480
gaagccaaac	atgaaacaag	tgctcattgat	ggcggagttt	ggaaatacaa	tgcagctttc	540
ccggtaggca	cctacaaatt	catcgcat	tataacctgg	acgagaagaa	ccaagccgct	600
ctcaacacga	ccataacagg	tatcagtaac	caaacttggg	aaaacatatt	gaagagtatt	660
gttattaccc	attttccttc	cgccaccgat	aataaccatg	aagatatgaa	tgaaatattc	720
tgtggcaaaa	caaaaagtgc	aatcgatatc	tccagtggag	tgggcggaga	tgacaatgaa	780
ataaaaatca	ataaactct	ggaacgcatt	gtatcacgca	tcgacattaa	gtttatcaaa	840
gtggcatcgg	atgacgacca	tatagaagta	ccttatgcta	ccggcaataa	tttcgggtgga	900

acaagtacta nctcgtggac ttcgntaatc ttcacatcgg ccaacgtacc tcttaaatat 960
aatcctaata gagaaaaatcc ggattatggt acaggaggtt aa 1002

<210> 5120
<211> 903
<212> DNA
<213> B.fragilis

<400> 5120
ttaaataagta aaatcgttat ggcaaaagaa atattattca atatacgaagc tcgcgatcaa 60
ttgaaaaaag gtgttgatgc tttggctaata gcagtaaaag taacactagg cccgaaagga 120
cgtaaatgtga ttattgaaaa gaaattcggg gtcctcaca ttactaaaga tgggtgtgact 180
gtagcaaaag aaattgaact gacagatgct taccagaata ccggtgcaca gttgggtgaaa 240
gaagtggcct ctaaaacagg tgatgatgcc ggtgacggta caactactgc aactgttttg 300
gctcaggcta ttattgctga gggctctgaag aatgtaactg ccggtgcaag ccctatggat 360
attaaacgtg gtatcgataa ggcggttgcc aaagtgggtg attctattaa acaccaggca 420
gagaaagtgg gtgacaacta tgacaagatt gagcagggtg ctactgtttc tgctaacaat 480
gatccgggta tcggtaaaact gattgccgat gctatgcgta aggtttctaa agacgggtgtg 540
attactatcg aagaagctaa aggtactgac actacaatcg gtgtgggtgga aggtatgcag 600
ttcgatcgtg gttatctgtc agcttacttt gtgactaaca cagagaaaat ggagtgtgag 660
atggagaaac cgtatatcct gatttacgat aagaaaattt ctaatctgaa agacttcttg 720
cctatccttg aaccggccgt tcagtctggg cgtcctctgt tgggtattgc agaagatgta 780
gacagtgaag cggtggctac actggtaggg aaccgtctgc gttctcagtt gaagaactgt 840
gcagtgaag ctcggggatt cggtgaccgt agaaaaaaga tgggtggaaaa atttcccttt 900
tga 903

<210> 5121
<211> 282
<212> DNA
<213> B.fragilis

<400> 5121
aaagtaacta tgaacattaa accattagca gacagagtgc tgatactccc tgcacctgca 60
gaagaaaaaa caattggtgg tatcattatt cctgatacag caaaagaaaa acctttgaag 120
ggtgaagtgt tggcagttgg tcacggtacg aaagacgaag aaatggtatt aaaggcaggc 180
gatactgttc tttatggaaa gtatgctgga acggaacttg aagtagaagg taaaaaatac 240
ctcattatgc gtcagagcga tgttctcgtt gttttgggtt aa 282

<210> 5122
<211> 372
<212> DNA
<213> B.fragilis

<400> 5122
agcacctgct ctccctgctg ggcatttacc gtagacggga gccgggcatg cagcctgaat 60
gtggaagccg taccgacaga gggcacatac gactttacag gcggtacatt gtccgtaaac 120
gaggggaagcg gcaccgtttc ttccaaggag aacatgctgc tgctcctgcc cggcaggcctt 180
gaagagagga gagcgcagat ccgctatctg gaccggacct atgactggta tcttccggca 240
aacacctttg aagccggtaa aagatatgat tacgcgttga ccctgagcaa ggaaggggtg 300
ctcatactct ccggtgtgag tgcccgtccc tgggaaaacgg gaggagacta taccggaacc 360
atacaaccct aa 372

<210> 5123
<211> 684
<212> DNA
<213> B.fragilis

<400> 5123
tccgggataa cgagcgggag ctccggagcgg gaattacggg cccgggtacaa cagccggttg 60

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cttccagggg aaaggaaaaa cctgccttgc aggaaaagaa ggaagaggaa gtacggcccg 120
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tccggctcgt caggcaggaa gagaggaatg tcatcaaggc attcgtgcac tccacacaga 240
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cgcgttcttg taaagatcac ctcggtaaac ctgggtggaa acatacttcc ctttgaaaag 420
caggttttatt ccgaggacgc aatacaagga atctatgtac cgggcaatgt gaaggcggag 480
acagcacagg aagccggagc ggcgggaata agcgggtgca acaccaatat ctccggagga 540
ttcgatatgg gaagccagct cgtggcagcg gcggccaaca gcgtcatcaa cgccaccaag 600
tcggcagcaa gcaagaatat ccggaaggta aagggtgacaa tcaagaccaa ctaccgcata 660
ctgctcagggc agccgaaaga gtga 684

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<210> 5124

<211> 183

<212> DNA

<213> B.fragilis

<400> 5124

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atggaaactg cgtttgcggg ttatgggatg gatccggatg ccaaagccgc tgctcttctt 60
gaacctgtct ttcagggggc aggcgagcgg gatcttgtcg gatactccgt accgggagag 120
tatatcccgg tagttttcca gtgtctccag gcgttcgcac ctgtccagtg ccttgtcgag 180
tag 183

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<210> 5125

<211> 984

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (135)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5125

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gacggcgagc attcnggggc acagctgaat atcgtaacct ccgtaagttc cgaaagcacc 180
gaaacaaggc ccagtttcca tcccaagaca gattggggcg caggcgacgg cgctggcctg 240
ttcatgtaca aagtccacgg ctgggggagc gcctaccgc gttatgatgc ccagaacaac 300
aagtcgacca ggcaggcgaa cggttggtca caggccagcc cgggtgtacct gctggtagac 360
aaggccacca tatgggccta ttatccgtat aaccaggccg tgacggacgg taccaaaata 420
ccggttcccta tcaatgtcgg cactgtcggt gattacatgt ggggcaaaag cactaaccag 480
gtatccgtga tcgagaccga tgccagaata ccgatgaagc atgcgctttc acagtttgtg 540
gtgcggctga aagtctcacc cgagtaccat aacgacggaa acctgacctc ggccaaactc 600
aaggcaacgg cctccaagtt cgccactacc ggaaccatga acctgaacga cgggggaaaa 660
attacgttcc aacctaccag caggagctg acctggagcc cgaatacaac cgttccggca 720
caggacagc aggcggtgga ttatgcccg gccatctacc cgatgacact ggccgcgggc 780
gaagtgtcgc ttgaagtggg gatcgacggg gcgacctata cctatgccaat cccgcaaata 840
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atcggaggaa agaacggaca gtctgtaacc atagaaggct ggacttccac tgaagaagac 960
atcacccttg ttccggtcaa atag 984

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<210> 5126

<211> 675

<212> DNA

<213> B.fragilis

<400> 5126

```

acaaatgggt ataaattata taatgaaact ttcatgaaag caaccaaag cataactcaat 60

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cgcaccaggc	tggtattcat	ttttctgcggg	ataaccatcg	cgatggtcct	gttcttcgcg	180
cacagcgtgg	tgaacaatgc	gatgaacaag	atactggtgg	tcaacgaagg	cggggaattc	240
gtccatttca	agtccatgca	gcaggacctg	ctgtacgaaa	gcctcctgaa	aagccactgc	300
cgccggacgg	cctatttctc	gaacagcttc	gacaggcttt	cccttcagga	aaaccgtgcc	360
cgtgccctgt	tcctgggtcaa	taagccggac	gcaaataccg	tatttgccaa	ataccaggcg	420
gaccgtgcct	atggcgatgc	gttggaaactc	ggagttgtct	acaagacgga	gtttgaaaag	480
atcatcgaca	tacgcgccga	cgggtgaggag	taccatgtca	ggttctcctc	catcctgagc	540
atcatcaacg	gcgatgagac	caggaaagtg	cggatcctga	gtgaggggtac	cgccatccat	600
gccaccccg	gctttccgga	aaatacgtcc	ggtttcttct	tccgtacctc	tgaccaacaa	660
tacgagctct	tatga					675

<210> 5127

<211> 1194

<212> DNA

<213> B.fragilis

<400> 5127

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accgcagtec	ccctgcagat	cgggtatgaa	aagaccttgc	acctgatctt	ccctaccgag	180
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gggatcatat	gcctgaaagc	ggcgggaagag	aacttcccgg	gggaaacaac	cctgtcgggt	300
gtaacggccg	acacaaagt	ctattcgtac	tccatcagct	acaacgcaca	tcgggccag	360
agttatgtgc	gtataggcgg	agaagcccc	acaccgcata	cgctgccggg	aggaaaagaa	420
aagcagctgt	tcctgatctt	ccctgccggg	atcacctacg	tcgattacgg	aagcacgaac	480
gtggagggtg	acaaggccga	gggagtggat	aacatcctgg	ccgtaaaagc	cgtccagccc	540
tataaggagg	atacgaacat	atcggtcgta	cttgaagggg	gaaagtctta	cactttcgac	600
ctgcgctatg	tgcccgtctc	ggagcgtttc	agctttgtca	tcgacaagga	ggataccag	660
aggggtggcca	tacttgacga	gaaggaaacg	tcttacgggc	agaaggaaag	gatcagggag	720
gctgtcgcga	aacgtgcccc	gctggatctg	ggactcaggg	acaagaattc	cggcatggag	780
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atccgcaaaa	aaacggcggg	gcagcagctc	gagcagaaca	tcctgttcac	tttcgattat	960
ccggaagaga	taccggcgca	tgagagccgg	acattcactg	tggccatgaa	caagttcacc	1020
atcccggata	agaaacggct	tatcatcgag	atccaggaga	ggaacggcgg	ccggcatttc	1080
ctgtacaagc	tgaagaacaa	gtcgtcgtcg	acagcagagg	aggtattcag	aagcagaaag	1140
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<210> 5128

<211> 228

<212> DNA

<213> B.fragilis

<400> 5128

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cctcttttatg	cttcacgcca	cgaacagtca	gggcaaagaa	gtgatgaaaa	ggcatctgtg	180
gatggagaag	aaaaagtccc	ggataatggt	ccggaacctg	aaaagtaa		228

<210> 5129

<211> 2433

<212> DNA

<213> B.fragilis

<400> 5129

agaagaaaca	agatgaaaga	ggaagaggca	tacagcatat	ttgacattat	cagcgagtcc	60
gatggacaaa	gcgtgatcct	gacccggagc	ggcagcatat	gtatcccgtt	cgagctccgg	120
cagccggagt	gctattccct	ttccccggaa	gacatcgacg	aaagggacgg	gatgtaccgg	180

gaagccttca	ggcacatgcc	cgacggtgcc	tacgtacaca	aacaggatgt	attccttaaa	240
aaagagtacc	acccgggcaa	aggcaccggc	tctttcctgg	accgtgccga	cgcgcgccac	300
tttgaaggac	gcctgtacat	cgaccacacc	tgtatcctgc	actttgtact	tgcagggctg	360
aaaagcctgg	agaaggcgta	tgtatcctca	cccctggcct	ataaggaaca	tctgcacagg	420
gaagactaca	gaaagctgga	agcctttctc	gaagggtggt	acaatgcggt	gagcatcctg	480
cagaacatgc	gcgggaactc	ggtgctgccc	atgtcctgtg	aagggatata	cggattcacc	540
cgcgcatact	ccggcctggt	cgggtgatacg	gacgccgtgg	tggatataca	cgtcgacggg	600
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ccggaaggaa	acatcgagtc	ctatgtcagg	gacgagtcgc	tgccaccggc	cgcttcacaa	720
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acgaaaaaca	tcatcgacaa	cacggacatg	ctgttcgtat	tgccatacaa	ggagggtcatc	2160
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gagaattacg	cgacggttac	ccgcctggag	ttctccaggg	agaagttcct	cgctttccag	2340
acggaaggcg	agatcttgtc	ggacctcgag	gacaaaaccg	gcagcggaaa	gtccatgcag	2400
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<210> 5130

<211> 582

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (481)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5130

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tgcgaacgcc	tggagacact	ggaaaactac	cgggatatac	tctcccggta	cggagtatcc	180
gacaagatcc	cgctcgcttg	tcccctgaaa	gacaggttca	ggaagagcag	cggctttggc	240
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ggactggcag	ccccggttta	cgccaccgcc	tccgggaacgg	tttctttcgc	gggaaggaaa	360
gggggggtacg	gaagatgcgt	cattatacgc	cattcttatg	gctttgaaac	gctgtatgcc	420
catctggccg	cctattacac	caccgaaggc	caaaaagtgc	acaaaggggc	tgtaatcgcg	480
nttgccggga	gcacgggtaa	aagtaggggc	taccacctgc	attatgaaat	cagaaaaaac	540

ggtaaaccta taaaaccata ctgggtatggc tatgacgatt ga

582

<210> 5131

<211> 615

<212> DNA

<213> B.fragilis

<400> 5131

caaaaaatga	aaataaaagt	gtataaacac	atagccatgt	ttctttttgcc	ggcgggccctt	60
acgggctgtt	cgggcaagga	agattccctc	cccgggacag	gagaggcggg	acttgagata	120
gaaaactgtt	tcagccgcag	taccggtaag	gatacgggcc	atgttccggg	aaaggacttc	180
ggcatgggtg	tgctcgatga	aacgggaggg	tcatataccg	gtgtcagcaa	tccgctgcat	240
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ctgttcgctt	tctccccgtt	ccggagtatc	ccgggaaagg	aagtggctgt	cagcctgagt	360
ccccagacgg	attacctggc	atcggatgaa	gtgcgtctgg	actggcagaa	ccccaggcg	420
agtattgaaa	tgaagcacct	gctctccctg	ctgggcattt	accgtagacg	ggagccgggc	480
atgcagcctg	aatgtggaag	ccgtaccgac	agagggcaca	tacgacttta	caggcgggtac	540
attgtccgta	aacgagggaa	gcggcacccg	ttcttccaag	gagaacatgc	tgctgctcct	600
gcccggcagg	cttga					615

<210> 5132

<211> 222

<212> DNA

<213> B.fragilis

<400> 5132

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cgtaccggta	ctgcggctga	aacagttttc	tatctcaagt	ccgcctctc	ctgtcccggg	120
gagggaaatc	tccttgccgg	aacagcccgt	aagggccgcc	ggcaaaagaa	acatggctat	180
gtgtttatac	acttttattt	tcattttttg	ctattcgttt	aa		222

<210> 5133

<211> 423

<212> DNA

<213> B.fragilis

<400> 5133

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ctgggaaacg	ggaggagact	ataccggaac	catacaaccc	taaaaacaac	catcatgaaa	120
agaaaatttc	tactgtccgc	ttttttattt	gcgtccaccc	tgcgcggata	tgacacaggat	180
gcccgcggcg	cgatgaacca	gatcctggac	ggttacaccc	tgccgatttt	tgccggcctgc	240
atgcttgttg	ggcttgccct	aggggtgggc	cagcagctgg	acaacatcat	cgacaaggag	300
aaccggggaa	cacgcaggga	cggcctgttt	gccctgggct	ggatatgtgg	tttctccctg	360
cttgccgggag	tcgtgataac	agcggccaaa	gccgcaatat	ccggcattaa	actgaccata	420
tga						423

<210> 5134

<211> 189

<212> DNA

<213> B.fragilis

<400> 5134

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cgcgacatac	tctttctaag	cttctattgt	ggatttattc	taatactgtc	tatacacaga	120
agtgatgaaa	aggcatctgt	ggatgaagaa	gaaaaagtcc	cggataatgg	tccggaacct	180
gaaaagtaa						189

<210> 5135

<211> 1305

<212> DNA
<213> B.fragilis

<400> 5135

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agaaagaaac	gaaataaaga	taaagtgacg	gatgataaga	ataacaactt	aaaaagctca	180
aatatgactg	ataaaaaaga	acttagaggc	aacctgatga	aagaagggtg	catcctgtgg	240
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gagccggaaa	tgtgctttcc	cgcgtggatc	gcaggagaga	aaaccggacg	gatcagtcctg	540
ttccttcagg	aaccttccac	cggaatatgt	gccattccgg	atatggtcgg	aataccggga	600
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tacttttattc	cggacatgac	cggattaccg	ggactgccgg	aattacaacc	ggatggcata	1140
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gcatacctga	aaattatcag	ttactccgca	agtttgaagg	ctttctctac	aaagatatcc	1260
gataatcaag	aagtgaaatc	ctgtaatatata	caaactgaaa	tttga		1305

<210> 5136

<211> 465

<212> DNA

<213> B.fragilis

<400> 5136

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aacgtctcgg	gtaataccgc	tcccctggcc	ggcctgaaag	gtaccctcac	cggtattttcc	120
accggccggg	accttgtctc	gcgggaaagg	actggaaacg	caagtgtcac	gagcctgttc	180
gcgcgtaaac	cggaaaccga	ccggtggaag	acaagcctgt	acgctttcgg	gttcaacccc	240
gcagcggaga	atatcctttc	ggtaaagatt	gaaatggacg	ggaaggattc	ggtattcaac	300
gaagagcaga	agggtggacct	gaccccgat	ctccggggat	ttgacagcga	tgaactttct	360
ctggaactgg	acctgcacat	cggcaaggaa	ctgaccatag	gagaaccggg	tgtcattccg	420
gattggggagg	atatcccggg	aacagaatta	ccaaactata	attaa		465

<210> 5137

<211> 852

<212> DNA

<213> B.fragilis

<400> 5137

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ataaagggta	tggtagtcat	agaggggttc	tacgcgctta	tcgccgggtt	tgtcataacg	180
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aacgccaggc	acttctacga	gctgggacgg	gagtacatct	tctgcatagg	cctgatctgc	300
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atgaaatcgc	tcgcctccgg	tgggggtctat	aacccgcaca	atatctggaa	agatccgatc	420
agtgccatgc	tggacagcct	gatgaacggt	gacatcaccg	acatagccgt	caacgggatc	480
gataacctga	aattggtccct	tatctcggga	acggtaggca	gtctcttcgg	agtggcctac	540
gattacatca	tgtctctgtt	cctctgtacc	cgttacctga	tactgtctct	gctcgagatc	600
atttctccca	tagcgatagc	ctgcctgtac	aataaggaca	cacgcagctc	cttctacaca	660

tggttcaagc	agatgctggg	atgctacatg	ctctatccgg	ggttttatcct	tgccagcggt	720
ttctcggacc	tgatcgtcac	gaactatgtc	ctgcaaaggt	cctggtcggg	gctgctgatg	780
gttatttttt	ctttcctgct	caagcttacg	atgctcggca	cggtaaaggc	cacagtaaac	840
aaatggttat	aa					852

<210> 5138
 <211> 1647
 <212> DNA
 <213> B.fragilis

<400> 5138						
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acgattgtct	gcagtctcct	tctgctgttg	gccttttcct	gcagccggga	agataccggg	120
ccgcaggaaa	ccattccggg	cagcgggagc	gtgacattta	ccgccatgac	cgggcaaggg	180
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aagttcaagc	cggaggcgga	agcggacaat	atcatagtaa	ccgtaggaac	cgactttgac	360
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gccggcaacc	aaagcgataa	atcgggatgg	ctctcggcag	acttcatgac	agcgacctat	480
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gtgaccctta	cacaggcgga	aagcggaaag	acactgacac	tgaccgtcag	acagaagggt	1620
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<210> 5139
 <211> 447
 <212> DNA
 <213> B.fragilis

<400> 5139						
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gtggtcgatg	tacaggcgtc	cttcaaagtg	gcgcgcgtcg	gcacgggtcca	ggaaagagcc	120
ggtgcctttg	cccgggtggg	actctttttt	aagggaatata	tcctgtttgt	gtacgtaggc	180
accgtcgggc	atgtgcctga	aggcttcccc	gtacatcccc	tccttttcgt	cgtatgtctt	240
cggggaaagg	gaatagcaact	ccggctgccg	gagctcgaac	gggatacata	tgctgccgct	300
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cggtcagtc	gtacttcgat	tccttga				447

<210> 5140
 <211> 615
 <212> DNA
 <213> B.fragilis

<400> 5140

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gaggaagtac	ggccccgggc	gcgcaaagcc	atggatagtg	tgccccgggc	accgaccgcg	480
aggggattca	acacgggtcc	gctcgtcagg	caggaagaga	ggaatgtcat	caaggcattc	540
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<210> 5141

<211> 534

<212> DNA

<213> B.fragilis

<400> 5141

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aaggagctgc	atagacaagt	gggtacactt	aaggaaacaga	agagcctgct	ggacgagagc	180
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cggctgtcca	ccctgcagaa	catagagaga	cagacccttg	aggaggaaag	gaaaatagcc	480
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<210> 5142

<211> 456

<212> DNA

<213> B.fragilis

<400> 5142

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ccagctttgt	tttatattac	ccatttcttc	cgagaacttt	ccgtatatga	gcagatattt	180
ttcgacattg	gcagttccgc	tttatatacc	ggattgggag	ttccgctttc	aattacaagt	240
gccataagat	atccgggagt	attctatctt	cctttaatgc	tactgtcagt	ttcggttaata	300
gcaactattt	acatagtctt	ctttatggcc	aggagttatg	atcctcttac	gacattatta	360
tggatcctgc	ctacaagcta	cctgctcaat	ttgattacag	gtgtcatttc	tatcttgagg	420
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<210> 5143

<211> 654

<212> DNA

<213> B.fragilis

<400> 5143

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cggggtggca	tggatggcgg	taccctcact	caggatccgc	actttcctgg	tctcatcgcc	120
gttgatgatg	ctcaggatgg	aggagaacct	gacatggtag	tcctcaccgt	cggcgcgtat	180
gtcgatgatc	ttttcaaact	ccgtcttgta	gacaactccg	agttccaacg	catcgccata	240
ggcacgggtc	gcctgggtatt	tggcaaatac	aagtatttgc	tccggcttat	tgaccaggaa	300
cagggcacgg	gcacgggtttt	cctgaaggga	aagcctgtcg	aagctgttca	ggaaataggg	360
cgtccggcgg	cagtggtttt	tcaggaggct	ttcgtacagc	aggtcctgct	gcattggactt	420
gaaatggacg	aattccccgc	cttcgttgac	caccagtatc	ttgttcatcg	cattgttcac	480

cacgctgtgc	gogaagaaca	ggaccatcgc	gatggttatc	cgcagaaaa	tgaataccag	540
cctgggtgcgc	agcgtatagc	tcttctctggc	ttcggccagg	cggagaaat	ccttgagtat	600
gctttgtata	ttgagtatgc	ttttgggtgc	tttcatgaaa	gtttcattat	ataa	654

<210> 5144

<211> 615

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (208)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5144

aattttccata	aaagaagacc	caaccaaagc	aatttttttta	agaaagaacg	agatccacgg	60
attctctatt	tacaagtctg	ccaacaggga	cagccgcaag	ccaaggagcg	attccgggac	120
ttgtttgtca	tgggtgtct	gaccgctcta	aggtattcgg	attattcgac	attgacccaa	180
gacaacctgc	aaggatgttt	catagtcnag	cgtaccagga	aaacgaatgt	ggatgtaaag	240
gttcctgcac	atgattatgt	caaagagata	tttgagaagt	acgacgggga	tattccgaca	300
gggctatgta	tccagcactt	caacaaatat	cttaagggtga	tcatgcgtga	aataggcttg	360
actgacaaag	tttcttattc	atttacccaa	ggcgggaaac	tgcatacggg	aactaaagag	420
aaatgggagt	taatcagcag	tcataccgcc	aggagatcgg	ctgccacgaa	tatgtatctg	480
accggccgca	tgaaaacatt	ggagatcatg	aaactcacca	gacaccggag	tgagcataac	540
ttcttcgggt	acatacgggt	aacgggtgat	gataccgcca	gatccataag	cggagatatg	600
tttttcagaa	aataa					615

<210> 5145

<211> 216

<212> DNA

<213> B.fragilis

<400> 5145

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tttcttgtga	atgttaacac	tatcagttgt	ctgtacacta	taaaagacgg	ccgtacgcgc	120
attacactca	cagcgccgtc	gtccaagggg	gacatcttta	ttaacgctca	agaatcttac	180
gaagaagtta	aggctttgat	taaggctgct	ctttaa			216

<210> 5146

<211> 240

<212> DNA

<213> B.fragilis

<400> 5146

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aatatctgtc	attccactat	aagcaaaatt	actattgaaa	tatcctatac	agatcgcagt	120
ttttctatgg	tatacaaact	ttctgacgga	ttaagtgtgc	cgagaaacaa	ttatccacaa	180
tgggataaaa	aacttttttag	agacaaggat	gatcttataa	gatatttatc	agaatcataa	240

<210> 5147

<211> 450

<212> DNA

<213> B.fragilis

<400> 5147

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caacatttgt	tgacatcatc	agcgggtggat	tcccttgcca	ggacatcagc	gttgctggaa	120
aaggtgtcgg	aattgtcggg	gaaagaagcg	gcttatggac	tgaaatgtat	cgagttatac	180
gggaagttag	acctaaatac	atcatcattg	aaaacagccc	aatgctcctt	attcgggggat	240

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<210> 5148
<211> 219
<212> DNA
<213> B.fragilis
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<210> 5149
<211> 615
<212> DNA
<213> B.fragilis
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<210> 5150
<211> 828
<212> DNA
<213> B.fragilis
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<210> 5151
<211> 654
<212> DNA
<213> B.fragilis
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<400> 5151
gagaaatttg ttctcggatg tataaagcgc atctgggggtt atccccacat tttggaaaac 60
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acggcagacg gactccgggg gggcacacgg ggaattgtaa cccggagata cgacggggta 180
tttgtgcctg aagggtatct cgttccctat tccggagatg aagaagaggg agttgttgta 240
aaggctactg cttgggaaaa cgtcatctgt acaaaaactc cgttaaaagt ggttcgggtt 300
gaggctactt cggaacagaa acgctatgag gcttctcata ttacagatgg agatgatttt 360
tcatgggtgga ttgctgatga tgaatctcag cccagatag ttctacttga attggaacga 420
tctgtgaatg tgtttgccag tcggattcgt tttcagaagg atagtcttac ttatacccat 480
aaagtcgaaa tttctatcga cggaaagaat tgggagactc tatacgaacg agaatgtacc 540
ggatgggatt ttaagcctgt gcagatcggg aaggaaactga aatatatgcg ccttaccatt 600
gagaaaagct cggagggagc agccggattg gctgaagtta cattgtatca ataa 654

<210> 5152
<211> 1089
<212> DNA
<213> B.fragilis

<400> 5152
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accaatccac tattggcagt aggagcagaa ccatgggctg tctttcacga aggcaaatat 180
tattacacgc aaggagccga gaataaaatt atcctttggg aaaccaatga catcaccgac 240
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ctctggggag cggagataca ccggattgac gggaaatggg atgtttatct cgcagcagat 360
gacggcaaca tggacaatca ccacatctat gtcatagaaa acagtctctc caaccggtt 420
gaaggtgaat ttgtgatgaa aggacgaatt aaaactgaca aagacgataa ttgggcaatc 480
catgccagta cattcgagca tcagggtcaa cgttatctca tttgggtgtg atggcctaag 540
cgccggattg aaacagaaac tcaatgtatc tatattgcca ggatggaaaa tccgtggaca 600
ctctcgtcgg acagggtgat gattgcggaa ccggaatatg aatgggaacg tcaatggatc 660
tcacctgatg gcagtaaaac agcttaccac atccacgtca acgagtcgcc acaattcttt 720
gaatcgaaga acaaggacaa agtgctgata tactactgtg ccagtgggaag ctggactccc 780
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tggaagaaac aggatactcc tgtctttgag cagcaacccg aagacagtgt tttcggaccg 900
ggtagtccct cttttgtccc tacaccggat gaaaaggaat ggtacatgct ttatcatgcc 960
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attaaatag 1089

<210> 5153
<211> 618
<212> DNA
<213> B.fragilis

<400> 5153
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gacaatccca cttttcacag ctactacgat ccggacggag acaagcatgt agagtacacc 180
gaaggtatat ttgtcggata tcgtggatac gataaactga aacgggaagt acaatatcca 240
tttggttacg gattgtcgta taccggtttt aaactttcgg caccgactgt cggactccg 300
aaaacggacg gttcggtaac agtcacctgt aaactacca acaccggaag aacggcaggc 360
gcagaagtgc tacaacttta tgtatccaac aaagatacga cagtggaaca tccggaaaaa 420
gaactgaaag gcttcgggaa agtatatctg gaaccgggag aaacaaagag tatagaaatt 480
actgttccgg cagaagcatt ctacattat gatacgggta gccggagact cgtcatcgac 540
cggggtagcc acgacatctt gttaggattt tcttcccggg atatcaaagc aaagatgtcg 600
gtcgggattt cacgttaa 618

<210> 5154

<211> 879
 <212> DNA
 <213> B.fragilis

<400> 5154

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caggtgaatc	gtaaaaagaa	agagcttcag	caggtgaagg	ttgctaaaga	aaatctgttg	120
cgcgaacggg	aaggtgaaaa	ggctaaactg	gaagcacagg	aaaaagaaaa	acgtgagatc	180
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cgtaagcgtg	ctgaagagga	agctcgtcgg	gaagcggcgg	cccgtaggaa	agcagctgcc	360
aaagaaagta	aatcgtcttc	gacgggaggg	ggtacgggtc	cagcaaagaa	gaaagcagaa	420
cctttggaac	gtttcaccat	gagcaaggcc	gaccgtgaac	tctcgggtaa	ttttgtaagt	480
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gggaaaccgg	gtgcacaggc	ccgtgctatt	tttgatggaa	aagtggctgc	cgtgttccaa	660
ttgaacggac	ttttcaatgt	actgatacgc	catggtgatt	atatctcggg	atattgtaat	720
ctttcatccg	cttcctgtga	atccggtgat	acggtaacga	cccggcaggc	tatcgggtccg	780
atcttctcgg	atggtagtga	caatggacgg	actgttcttc	atttccagtt	gcgcagggag	840
agggacaaac	tgaatccgga	gccatggctg	aaccgataa			879

<210> 5155
 <211> 3153
 <212> DNA
 <213> B.fragilis

<400> 5155

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ttacaggcat	tctcctatct	ttcttttaag	aagtatcagg	tagaagacgg	attatcacat	120
aacacagtct	ggtgcgccat	gcaagatagc	tatggcttta	tatggctggg	aacgagcgac	180
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gataagaaga	cccgtctatg	cgtttttatc	agtagtgaga	taaagaaaat	aataaagtcc	420
gaaagcgggt	tgatctggat	tgccactttg	ggacaaggat	tatttgttta	taatcctcaa	480
acggatgtgt	tgacacagaa	tagtcttcag	acctctttcg	tatgggacgt	ttgtgagaat	540
aactctggac	atatctatgc	ctctctttta	caggaagggt	tgctttgctt	cgatgaaaac	600
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aatcactgg	ctgaagcaca	ccatggtagc	ttgagccttg	aagatagtg	atatgggtgga	3120
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<210> 5156

<211> 906

<212> DNA

<213> B.fragilis

<400> 5156

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gaacagggtg	ccgagttatc	gggcagtaaa	tttaccattc	tgttggtgga	agataatgtc	180
gacttgctga	atctgacccg	ggaatctctg	agtacctgg	ttaaagtctt	gaaagctcag	240
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cattga						906

<210> 5157

<211> 1950

<212> DNA

<213> B.fragilis

<400> 5157

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aacattttacc	gtgctccgat	gtgtggacgt	aatttcgaat	atatgggaga	agaccggtat	420
ctcacttcac	gcatggcaac	cggatatata	aaaggcgtac	aagggaagg	ggcatggct	480

accatcaaac	actttatcgc	caataactcg	gattatgata	gtgatcatat	cagttcggat	540
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<210> 5158

<211> 651

<212> DNA

<213> B.fragilis

<400> 5158

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aaattcacct	caagtgcctc	tttccagtat	acccgtgtca	agtttccgtt	gaaaactccc	300
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gaagagtcgg	aagttagatc	tcgtgtgata	ttcgacttga	ttgatggtaa	gtggtagctg	540
accgattgct	ataccgatg	gtatggatac	gaccttccga	ttgacgatct	gaacgaaact	600
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<210> 5159

<211> 552

<212> DNA

<213> B.fragilis

<400> 5159

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aagacactta	tctatggtgg	tgccaaacct	ggactcatgg	aatgcgtggc	caaagcagtc	180
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gtgagtacat	accccgatga	gataatcgcc	acacacgacc	tgagcgaccg	caaggatatc	300
atcctgcaac	aatcggatgt	attggtggcc	cttcccggcg	gcataggcac	gctggatgag	360
gtatttcata	tcatggcagc	cgcttccatc	ggctatcatc	agaagaaagt	gatcttctac	420
aatgcagatg	gtttctacaa	cccactgtct	gccgtgtctc	gccaattaca	gacaagagga	480
ttcacccgtc	accctctgtc	ctcctattat	gaagtagcaa	acacatttaa	tgaattaaca	540

attaagatat aa

552

<210> 5160

<211> 585

<212> DNA

<213> B.fragilis

<400> 5160

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gaggagtctt	ttcccgaaag	tgagagaaga	aaaatcgggc	agttgaagcg	aatgattgag	180
aaccatgccc	caatgtatct	caatgctatt	gaatgtgatg	gagaattgag	tggaatgttt	240
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cggataaaaa	agatagggca	gcaagtgctt	gattatgtgg	ctgaacacct	gaaaggggta	360
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cggcgtaatg	gatatgaagt	gctggataaa	acttatgtgc	agccttctta	tcattgcgtt	480
gaagatgctt	gtccgctttg	gattatggga	agtgaagatt	ctccccggtt	ggctgagcag	540
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<210> 5161

<211> 708

<212> DNA

<213> B.fragilis

<400> 5161

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ttgttgaact	acgataaaa	attcatcgaa	caacatgacc	attacatgaa	gcagacctac	180
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aaagaatata	aaacagactt	tgccccgaac	gaaatcgatt	ttcgcgaagc	gatccatccc	540
aagaaagatt	ttcacccggac	agatccggaa	tttatccctc	agccttacta	tcagggtattc	600
gaagcccggc	acgggttttct	acccaacctg	agcatcatcg	accttctgtt	taatatggga	660
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<210> 5162

<211> 1242

<212> DNA

<213> B.fragilis

<400> 5162

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gtcagccttt	gggatattaa	acaagccgga	gctacgggta	ttgttaacgc	tttacaccac	180
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cagactggca	actttcggaa	atacatcgag	aattataaag	aaagtttgcg	taacttggga	360
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gatcttgcc	ataccctccc	cgatggctcc	aaagccctgc	gttttgaacg	cgccgccttc	480
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cagagaagaa	aagtatcgat	ccccatgccc	ccggaccacg	gacaccagat	ggtagatgac	1140
cttaaaaaaga	aaacaaaccc	gggatactcc	tgcataggac	gcctgcgagg	acttgccgag	1200
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<210> 5163

<211> 282

<212> DNA

<213> B.fragilis

<400> 5163

aatacggcaa	ccgctctgta	ccaatgtcca	ttgtcccaca	tgacaatatt	gatggaggggt	60
aacattgccca	ctcaggatga	cacaatcatc	caaggtacat	tctccggcga	tggtgggtgcc	120
gataccgggt	acacaattat	ctccgatttg	tacatcgtga	caaagtgtgga	ctttatccat	180
caagaaattg	ccattgccta	ttttggtagc	attcccaccg	aaagtagccc	gactgataac	240
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<210> 5164

<211> 396

<212> DNA

<213> B.fragilis

<400> 5164

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tttttgggat	tccgtaccca	gaaaagcagt	gctctacagc	ccgtaaataa	cgggggtggcg	120
gtcactactg	ccgtaaaaag	ccacactcac	aatgttccct	cttttgataa	ctccgggtcac	180
gatctgtttg	acttcaatca	ggggatactg	cttaagaaat	cggtttcgga	ttcagccaat	240
ccgtataaac	agagcaataa	cttccatccc	gctatcaaga	cggatgctca	gagaccgata	300
acattcaaag	aagatacttc	tacctatacc	ctccgtaaca	gagttaagcc	tgcacaaaaa	360
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<210> 5165

<211> 765

<212> DNA

<213> B.fragilis

<400> 5165

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attatcgaca	tcaacaacca	ggatgatttc	gaatccgaag	cgttcaaata	ggcagatgtg	180
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gacgtaacca	tgagcgaaac	ccaccacgta	cacaagctcg	atgcaccaag	cggaacagcg	480
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gaagcacatg	caaccaatga	attgccgac	cactctatct	gcgaaggaga	agtattcggt	600
atccatacca	tccgctatga	ctccgaagca	gacagtatct	ccatcaccca	cgatgccaaa	660
aaccggggag	gttttcgcatt	gggagccgta	ttggcggcag	agtatacagc	agcccatgaa	720
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<210> 5166

<211> 975

<212> DNA

<213> B.fragilis

<400> 5166

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gcagccgttc	ccggaggctc	tgtattcaac	ggcatcgttt	ctttgggacg	catgggagtc	180
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ggttcatatt	atgctctcaa	tccggtattg	cgtgataaga	tattggaact	gctggacata	480
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cggtagcgtg	acttgcaaca	cctgagtga	gagacctggg	ataaagtgat	acaatgcgga	900
caagactttg	cagccgaagt	ctgcaaaagt	ttcaacaact	ccatatccgg	ggagtttgcg	960
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<210> 5167

<211> 186

<212> DNA

<213> B.fragilis

<400> 5167

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tccctttttca	gatatgtgtg	ggatcagaag	ttagactttc	tttacctcgc	aaaggcattg	120
aatcctccat	ccactaccgc	cactgtaccc	gttaciaaagc	ttgtctcgtc	gctgatgagg	180
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<210> 5168

<211> 1236

<212> DNA

<213> B.fragilis

<400> 5168

caaataacac	aaaaaatgaa	gaagcatctg	atatttatctg	cttgctgat	aatggcaata	60
agcagttttg	ctcaaaaaaa	ggacttttagt	tataagtttt	acggacagat	tcgcacagac	120
ctttattaca	acagtcgtgc	caacgaagag	acagtagacg	gattgtttta	catgtacccc	180
aaagacgaag	tattcgatag	caatggcaga	gatttaaagt	caactgccaa	cggtagcttt	240
tacaccctat	ataccgcct	gggattggat	gtaaagggac	ctaaactggg	acgcgccatg	300
acttccgcca	aagtggagc	agacttccgc	ggttcaggta	cttcttactc	tactatacgc	360
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tggcatccgc	tcttcggtga	cgtatcacct	cagatcctga	atctttcgg	cggagcacct	480
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aaagtagagg	accaagtcta	taaagtgaac	gagcgcacat	ccaccctgtc	ttacgaaggt	780
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gaactgacct	ataatgtcaa	ccactggaag	tttggagtgg	aatataccta	tacttccgcc	1140
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<210> 5169

<211> 1587

<212> DNA
<213> B.fragilis

<400> 5169

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tatccggata	ttgcccctcc	tactgtacgt	gtcaacacga	cgtatcaggg	agccaatgca	180
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<210> 5170
<211> 855
<212> DNA
<213> B.fragilis

<400> 5170

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<210> 5171
<211> 1185
<212> DNA
<213> B.fragilis

<400> 5171

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gaaaacgtca	gcaccctgaa	agacggtgct	actatcaagc	cgctcaccca	gcaggaatcg	1140
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<210> 5172

<211> 939

<212> DNA

<213> B.fragilis

<400> 5172

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atgtcattat	tctcctacca	ccgctgggga	gaaagtccca	tacataaaga	cgacatcgct	240
gtattcaata	accctgcggg	tatcaaagaa	cccattatag	accgaagaga	gatttatata	300
agccgatgca	tccgtgtacc	gggggatacg	ttacttatcg	attcactctt	caacgtgggtc	360
gaccgtagca	cacaactcgg	accggaccgg	aaacaactat	atacgtatcc	gcaaaaccaag	420
gaacagcaac	tggattcatt	gctttctatt	ctttctattg	gccctaata	actgatggga	480
caacacgaag	gaaaaaatgt	acggagcttc	agccgctatg	agtattattt	gctcgatcag	540
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ccactcatcg	ttccgggtaa	aggaaaagca	gtccgggtat	atccgtggaa	ccggacattg	660
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tacatcgaag	gacgtccttc	acaacattgt	tattttacca	aagattatta	ctggatggct	780
tccaataatt	ccgtaaatct	ttccgattcc	cgctgttcg	gtttcgtagc	gcaggatcat	840
gtcattggaa	aagcttcacg	aatctggttc	tcaaaaacag	accatacggg	aatcttttagc	900
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<210> 5173

<211> 1476

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1014)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5173

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gctctcttga	gcagctgcca	catctacaaa	tcatatgaca	gacctaaaga	tattgaagcc	180

tccggtcttt	accgggacac	agtatctgtt	gccgatacac	tggtatccga	tactgtcaac	240
ttcggaaatc	tgccttggag	agaggtcttc	accgatcctc	aactgcaagc	gttaatcgaa	300
cagggattaa	cccacaatac	agatctgctg	actgctgcgc	tgaaagtga	agaggcacag	360
gcatactga	tgtcagcccg	tctggcttac	gctccttcac	tccgattgtc	accacaagga	420
accatcagca	gctttgataa	gcatagccga	acaaaaacct	attcgttgcc	ggcaacagcc	480
agctgggaga	tcatctatt	cggcaagtgt	ctgaatgcc	aacgcggtgc	acaagtaaca	540
ttgttgcaaa	ccaaagcata	tcgtcaggct	gtacagactc	agatcatttc	gggcattgcc	600
aatacctatt	acaccttatt	gatgctcgac	cgtcagctcg	atattaccga	acagactgcc	660
gacatcatga	agcgtaatgt	tgaaccatg	caggcaatga	aagatgcggc	tatgttcaac	720
actacctctg	caggggtgga	acaaagcaag	gctgcctatg	cacaagtact	ggcgtctatt	780
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gtgggcgttc	ctttgcaact	actctctaac	cgtccggatg	tgaaagcagc	cgaaatggca	960
ttggccggta	cttactacaa	tgcaaattcg	acccgtgccg	ccttctatcc	gcanatcact	1020
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ctgcttgcc	ctgtacttgg	ttcgttacc	cagctctct	tctaccgtgg	tgcaaacatt	1140
gcccgcctga	agatagccaa	ggcacaacag	gaagaggcta	aactggcctt	ccagcagagt	1200
ttgttgaatg	cgggaagtga	agtaagcaat	gcattgtatc	aatatcagag	tgcttctgaa	1260
aaaactgctt	cccgcgaatt	acaggtagaa	tcttcagaaa	aagcatccga	atatacaaaa	1320
gaattgttta	aattagggac	gtctacttat	ctggagggtat	tgtcggccga	acagtctttg	1380
ctcagtcccc	gtttatctca	ggtaaagcag	accttcgacc	ggatgcaggc	tgtagtgagc	1440
ctctatcagg	cattggggcg	cgggaagagaa	gattaa			1476

<210> 5174
 <211> 939
 <212> DNA
 <213> B.fragilis

<400> 5174						
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cgaatagatc	ggggagaatt	ccgccataag	gatgtacggg	atattcttcc	cgaaaacaac	180
cgggttcctc	acctcattcc	acaacttata	gcctccgaga	tggaacaaaac	agagcgaata	240
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ccgatgttgg	caaaacggca	atgtggatcg	ggcatgctgc	cccacctga	taaagtggaa	360
acattactca	aacagatcga	acagtatccc	gatgtgagct	tctcagtaaa	aatgcgcctg	420
ggatgggaaa	agccggatga	atgtttgacc	ctgttgccctc	tattgaatgc	ggctccgctg	480
accgagatta	tgtttcacc	ccgcttaggt	atccagcaat	acaaaggaga	agtaaatatg	540
gagggaattta	cagctttcta	cgaagcatgc	agacatcctg	ttatctacaa	cggagacatc	600
ctgaccatag	aagatatccg	gtgcataccc	gaaaagtttc	cgaaacttac	cggagtgatg	660
atcgcccgcg	gattattggc	aaaccctgca	ttgggttggg	aatataaaga	aggcaagaaa	720
cttacgcctg	aagaatggag	agaaaagtgt	agagcactgc	acacagccgt	tttccaacac	780
tacgagacac	agatacaagg	tggcgaagca	caactggtga	ctaagatgaa	aacgttctgg	840
gagtatctgg	ccccacaaat	agaccgaaag	agctggaaaag	ctatccataa	aagcactacg	900
cttgccaaat	acaacattgc	cgtccgttcg	gcattttga			939

<210> 5175
 <211> 1695
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (1417)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5175						
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ttgaagaaat	ataaaaaacg	tgttctcttc	ttcatccaga	aaccggtgct	gaccatcggc	120

tccgtagtag	tgggttttcgc	actgctcatc	ttcctgatga	aagtgactcc	gaccggtttg	180
gtaccgaatg	aagatacagg	aacgattatg	gcagtagtcg	atatgcctcc	cggaagctca	240
ctggaacgca	ctcaggaagt	gatgtggcag	gtagatagcc	tactggcctc	cgacccgggt	300
atcgaaagcc	gtaccatgat	cgccggttat	agctttatcg	ccggtcaggg	tcccagctac	360
ggttcattta	tctgtaaaat	gaagaactgg	gatgagcggt	ccatcgctca	acgttctgac	420
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ttattcgctc	cccctatgat	tccgggttac	agtgtatcca	acggtttcga	aatgaactta	540
caggataaga	caggcggtag	tctggataaa	ttctatgaag	tagctcagga	ctttatcacc	600
aagctacagg	cacgccccga	aattcagtcg	gcacagactt	cgttcaaccc	gaacttcccg	660
cagtacatga	tcgatatcga	tgcgcgtgct	tgtagaagg	ccggattatc	tccgagcgac	720
atccttacta	ccctgcaagg	atattacggg	ggctctatatt	cgtccaactt	caaccgggtc	780
ggtaagatgt	accgtgtaat	gattcaggcc	gatccgaaca	gccgtaccaa	tctggagtca	840
ctgaactcgg	ttaaagtacg	caacggcaac	gagatggctc	ctatcactca	gtttatgagc	900
gttaaacgta	tttacggacc	ggacaacatc	aagcgtttca	acatgtttac	ggcgatgact	960
atcaatgggt	cgccggctga	cggatacagt	tccggtcagg	ccatccaagc	catgcaggaa	1020
gtggcagaac	agacgttgcc	taccggatac	ggatatgaat	tctcgggtat	gaccogtgaa	1080
gaacaaagtt	cgagcggcag	tactactgcg	atgatcttcg	tcctctgctt	cgtattttgtt	1140
tatctgttgc	tgagtgcaca	atacgaaagt	tatatcttcc	cgtttgccgt	actgctttct	1200
ataccgttcc	gtctggcagg	tagcttcatt	ttcgcccacc	tgatgggatt	ggcaaacaat	1260
gtccttccga	tactgggagc	agctaccaac	aacatttata	tgcagatcgc	attgatcatg	1320
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aagatgggta	tgagtatcac	ttgggctgcc	gtattgngtg	caggtgcccg	tctccgcccg	1440
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atgatatgcc	agatattcgt	ggttcctgct	ttgttcgtta	tcttcagta	tctacaagag	1620
aaggtgaaac	ctattgaatg	ggaagacatc	gataatacgg	atgcagaaac	agaaattgaa	1680
caatacgcta	aatag					1695

<210> 5176

<211> 627

<212> DNA

<213> B.fragilis

<400> 5176

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attgccgatt	tggcacatag	tacgaatcat	gctctgcaaa	ctttgggata	tccgactcat	120
gaagtcgctt	cctataactt	catgggtgggt	aacggcatca	acaaattgtt	tgagcgtgca	180
ttgcccgaag	gagagaaaaac	cgaggagaat	gtgctccgcg	ttcgtaaaga	atttcttttg	240
cattatgacc	ggcataatgc	cgacgagagt	cgcccttatc	cggaattcc	ggaattgttg	300
gaaacattgc	agcataaagg	ttataaattg	gccgtggctt	ccaataaata	tcaggcagcc	360
accgagaagc	tgatagcaca	ttatttcccg	ggaatccggg	ttgttgctgt	atttgggcag	420
cgtgagggag	tgaaggtgaa	gccggatcct	gctgtgggtc	atgatatttt	gcagattgcc	480
gatgtttcga	aagacgaagt	gctgtatgtc	ggcgattcgg	gagtggatat	gcagacgggt	540
atcaatagcg	gagttacttc	ctgtggagtt	acgggggggat	ttcgcccccg	taccggactt	600
ggaatccgtc	tggccggaat	tttatag				627

<210> 5177

<211> 516

<212> DNA

<213> B.fragilis

<400> 5177

gttaaagtgg	aacaaataca	cagaaaaaaa	ggcaaacttg	taacttccgg	catgggtaaa	60
gccggacaaa	tagcgatgaa	catcgccact	acgtttttgtt	cgaccggaat	tccctctgtc	120
ttcctgcacc	ccagcgaggc	acaacacggc	gatctgggca	tcctgcaaga	gaacgacctg	180
ttattattga	tttcaaattc	aggtaaaacc	cgtgaaatcg	tagagttaac	ccagctggcc	240
cacaacctga	atccgggcct	gaaattcatt	gtcatcaccg	gcaatccgga	cagtcgcgtt	300
gccagcgaat	cggatgtatg	cctgagcaca	ggacatcctg	ccgaagtttg	taccctgggg	360
atgactccga	ccacttcgac	tacggtaatg	accgtcatcg	gcgatattct	cgtagtgcaa	420

accatgaaaa	ggaccgaatt	tactattgaa	gaatactcca	aacgccatca	cggtgggttac	480
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<210> 5178

<211> 3093

<212> DNA

<213> B.fragilis

<400> 5178

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aaaaaccccc	aaattaatgc	ggtaaaccgt	gcaccgatgc	acaccaatta	ctttgcttac	120
tcttcaagt	aagaagccgc	aaaagccgat	aaggaaaact	caagcaactt	tatgaccctg	180
aatggcatct	ggaaattcaa	ctgggtgaaa	aatgcagatg	ctcgaccgac	cgacttctac	240
cggacagact	ataatgataa	aggttgggga	cagatgaaag	tccccggtgt	ttgggaaatg	300
aacggatacg	gtgatccgat	ttatgtcaac	gtaggttacg	cctggagaag	ccaatacaaa	360
aacaatcctc	cttatgtgcc	catagaaaac	aaccatgtag	gatcgtatcg	gaaagaaatc	420
attattcctg	cgaatggtc	agaaaaagaa	atattcgccc	actttggttc	ggtcacttca	480
aacatgtatc	tatgggtcaa	cggtaaatat	gtgggatata	gcgaagacag	taaactggaa	540
gctgaattta	acctgaccaa	atatctgaaa	cggggcaaga	acctgattgc	gtttcaggta	600
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agcggaaacg	tagagttgaa	cctgacagat	cgggcaggaa	aaagtgttgc	tacggcacag	840
gttaacggaa	atggacaaaa	gtctgttgct	atggacgtga	gcaatcctga	aaaatggaca	900
gcagaaacac	ccaacttata	tacactgact	gcaaccctga	aaaacggcag	caacacgctg	960
gaagtgatcc	cggtaaaagt	aggtttccgc	aaaattgaat	tgaaggcg	acagatactg	1020
gtgaacgggc	aaccggtgct	ctttaaaggt	gccgaccgcc	acgaaatgga	tccggacgga	1080
ggatacgtgg	tttcccgctga	acgcatgctg	caagatatct	tgcgtatgaa	gcagctgaac	1140
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caatacggta	tctatgtagt	ggcagaggcc	aatatcgagt	cgcacggaat	gggatatggc	1260
aaagaaacac	ttgccaaaaa	tccatcttac	aaaaaagcac	acatggaacg	caaccaacgc	1320
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ggatacggcc	cgaacttcga	acagtgcctat	acatggatca	aaaacgagga	caaaacacgc	1440
gccgtacaat	atgagcaggc	gggtaccaat	gaatttacag	acattttctg	cccgatgtat	1500
tacgattatg	acgcctgcaa	gaagtacagc	gaaggcaata	tagacaaacc	tttgatccaa	1560
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ccgcgatccc	atgaagtggg	atatctctac	cagtcaatct	ggactactcc	cggcgatctg	1860
tcaaagggag	aaataaagggt	atataacgaa	aacttcttcc	gggatttgct	cgcttattat	1920
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aacgtggctc	cccaacaaac	agcgactctc	aaactgaatc	tgaatacggg	aaaggtctgt	2040
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cgggcaggaa	gtacagtggc	atatgaccag	ctgaccatcc	gtccgtatac	agccaaagca	2160
ttggaattaa	agaaccagaa	agcatctaat	cttgacattg	tctgaccggg	cattaaggac	2220
aacgaccata	attatctgat	tgtagaaggc	gaaaacttca	taatcgaatt	caataagcac	2280
aatggatata	tctctcgtaa	cgaagcagat	ggtatgcaat	tattaaatcc	gggagctcaa	2340
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aaagaagaaa	aggtttctga	tatgttccgt	ttcggcatgc	aaatgcaaat	gcccgaatac	2640
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gagtctttgg	atgacggagt	acaaaaagac	caacgccact	ctcctgaagt	agcgaaagct	2940
cctttcacta	acctttgcat	cgataaagta	cagatgggtc	tgggatgtgt	caacagttgg	3000

ggaacacttc	cactggagaa	ataccgtgta	ccttatcagg	attatgaatt	cagtttcatc	3060
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<210> 5179

<211> 1353

<212> DNA

<213> B.fragilis

<400> 5179

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gagcacatta	acgtcttggt	aacaatggaa	caactcctgc	actatgtgtg	gaaacacaaa	120
atcttccctc	tccatgaact	gcaaacaacc	accgggctgc	ctgttgaagt	gattgatacc	180
ggattgccga	attctgattc	cggccccgat	ttttttaatg	ccaaactaaa	aatcgggtgg	240
acgctttggg	taggtaatgt	cgaaatacat	actgcttctt	ctgattgggt	tcgtcacgga	300
catgaccgtg	acatagcgta	tgattcagtg	attctgcaca	ttgtcacaga	gatcgattgc	360
gagatatatc	gttccaatgg	ggaaccgggt	ccgcaactcc	ggttaccttg	ccccgaacag	420
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gaagcggaga	ctctgaaaga	tctgaaacag	atttttgccg	gtcacacttc	tgcttattgg	1020
gaagaacatt	tcatgtttgg	caaactcctc	ccacggagag	agaaaagtat	tggtgccggt	1080
gcaaaggagc	tgatcattat	caatacggtc	attccttttc	tgtatgcata	tggcctgcat	1140
aaagccgacg	aacggttggt	tgagcgtgct	gcctcattac	ttgaagaact	gaaagctgaa	1200
aataattatg	ttaccctgat	gtggagcggg	gccggcattc	cggttcagac	agcggcggat	1260
agccaggcgt	tgttacaatt	gcagaaagaa	tattgcgata	agaagaagtg	tctttattgc	1320
cgttttggct	atgagtatct	gagacataaa	taa			1353

<210> 5180

<211> 225

<212> DNA

<213> B.fragilis

<400> 5180

gagcttttca	gattgacagt	gggtgggctgc	aatgtctcta	ctgcacattc	gggagttcct	60
cccatgttga	agcccttttt	gccgcaaccc	gacaacaagg	ctaaacaaaa	tgcaaacaaa	120
acaattttac	ttttcatacc	ttctttatat	tcaattttta	atgatgttca	ttttgtggca	180
aagtggttta	tcgtgataac	cttatcaggt	atagatgaaa	actga		225

<210> 5181

<211> 828

<212> DNA

<213> B.fragilis

<400> 5181

gcctctatca	ggcattgggc	ggcgggaagag	aagattaact	ttaaatacaa	tacaattatg	60
attagtccat	tagcatcgat	agcccccg	gcaaaaatcg	gaaagaatgt	gatcattcaa	120
ccgtttgctt	acattgaaga	taatgtcgaa	ataggggacg	actgtatcat	tatgccctat	180
gccagtgtgc	tgaatggtac	acggctggga	aaaggtaaca	aagtatatca	acatgccgta	240
ttaggagcag	aaccacagga	tttccactac	aaaggagaag	aaagttcact	gattatcggg	300
gataacaacc	atatccgoga	aaacgtagtt	atcagtcggg	ctactttcgg	tggggaatgt	360
acaaaaatag	gcaatggcaa	tttcttgatg	gataaaagtc	acattttgtc	cgatgtacaa	420
atcggagata	attgtgtagc	cggtatcggc	accaccatcg	ccggagaatg	taccttggat	480
gattgtgtca	tcctgagtgg	caatgttacc	ctccatcaat	attgtcatgt	gggacaatgg	540

acattggtac	agagcgggttg	cgtattttca	aaagatgtgc	ccccatacag	cattatggcc	600
ggtaacccgg	tagaatatca	cggagtaa	gccgtagtat	tgcaacaaca	taaaaatagc	660
agcgaaagag	ttctacgcca	catagccaat	gcttatcgcc	tgatctatca	gggaaacttc	720
agcctgcagg	atgcagtgca	aaaaattata	gaccaggttc	ccatgagcga	agagatagag	780
aatatagtgg	cttttgtcaa	agagtctaag	cgtggaatcg	taaaatag		828

<210> 5182

<211> 1302

<212> DNA

<213> B.fragilis

<400> 5182

acgacaataa	gttttattgt	atttttgtgt	cctcaaccta	acttaatagt	agaatgaag	60
cagttaagta	cccgtgcaga	aatgcaatat	aatatacata	ccctgtccaa	tggaacttcgc	120
attattcatg	aaccctcttc	ttcgaagggtg	gcttattgcg	gatttgccgt	agatgccgga	180
accctgatg	aggccgaaaa	tgaacaagga	atggctcact	ttgtagagca	tcttattttt	240
aaaggtagcc	ggaaacggaa	ggcttggcat	atcctgaacc	gcatggagaa	tgtgggtggc	300
gatctgaatg	cgtataccaa	taaagaggaa	actgtgat	attcggcatt	tctgaccgag	360
cacttcggaa	gagcactgga	actgctgggc	ggatategtt	ttccattcca	cctttccgca	420
gaacgaaatc	gaaaaagaga	cagagggtgat	atcgatgaaa	tacagtcgta	cgaagacact	480
ccttcgggaat	tgatctttga	tgactttgaa	gatatgatct	tccgcaatca	tccgttagga	540
cgtaatatcc	tgggcagacc	cgatctgctg	aagaaattcc	ggagcgagga	tgccatggct	600
tttacttccc	ggttttatca	accctccaat	atggtattct	ttgtcctggg	tgatttcaat	660
tttcagaaaa	tagtccgtca	ggtggagaag	ctggttagtg	atcttcctgt	ggttacgggt	720
gagaatcagc	gtacgatacc	tccgctttat	gtacccgagc	agttgggtgt	tcacaaggag	780
acccatcagg	cacatgtgat	gattggcagt	cggggatata	atgcctatga	tgacaagcgt	840
accgcattgt	atctgctgaa	taatatctctg	ggtgggtccg	ggatgaacag	tctgtctgaat	900
gtctctctgc	gcgaacgcag	gggactgggtc	tatacgggtg	agtccaactt	aacgtcatat	960
accgatacgg	gagctttctg	cattttatttc	ggtaccgatc	cggaggatgt	ggatacttgt	1020
ctgaaactga	cttacaagga	gctgaaacgg	atgcgtgatg	tgaagatgac	ctcttcgcaa	1080
ttgatggctg	ccaaaaagca	actgatcggc	cagatcgggg	tcgcttcgga	taataacgaa	1140
aacaatgcgc	tgggaatggc	gaagactttt	ctgcactaca	ataagtatga	atcatccgaa	1200
tctgttttcc	ggcgtatcga	agccttgacg	gcagaaggac	tggtggaggt	agccaatgaa	1260
atgtttgcag	aggaatatct	ctctacactg	atttacagat	aa		1302

<210> 5183

<211> 1497

<212> DNA

<213> B.fragilis

<400> 5183

aagattaaca	tcatgagaaa	agcaacacgt	actcaatgga	taaagtgttc	cattgccatt	60
cttttgtatc	tgatattcct	gatttgggtg	aaaagctggg	ggggactgat	cgtagtccct	120
ttcatcttcg	acatctacat	cacaaaaaag	attccctggg	cgttctggaa	gaaatctaaa	180
aaaccgacgg	tccgtagtgt	gatgagttgg	gtagatgcca	tcgttttcgc	tttggttagca	240
gtatatttgc	taaacatcta	tgtttttcag	aattatcaga	tcccatcatc	gtcactggaa	300
aaatcgctgc	tggttggaga	cttcctctac	gtgagcaaaa	tgagttacgg	cccccggtgtg	360
ccgaacacac	cgctatcaat	gcccttggca	caacatacat	tgccgattct	gaatactaaa	420
tcctatatattg	aatggccgca	atggaaatac	aaacgtgtac	ccggattcgg	taaagtgaaa	480
ctgaatgaca	tcgtagtggt	taacttccct	gcgggagata	ccgtcgcact	gaatttccag	540
gatgcagact	tttatacatt	ggcgtacaac	atcggaagc	agattttacc	gaaccgcgac	600
gacatggaca	gcctgactcg	ggagcagcag	aagacagtgt	atgatttata	ctataatgcc	660
ggtcggaaag	agatactgtc	aaaccctcaa	cgataggtta	aagttgttac	cgtccgggta	720
gaccgcgggg	agaactatgt	aaaacgttgt	gtaggacttc	cgggagatac	actccagatt	780
atcaacgggtc	aggttatgat	tgatggcag	gccattgaaa	acccgaaaaa	cttgcaattc	840
aactattttg	tgcacaactac	cggcccgtac	atcacggaag	aaatgttccg	cgaactgggt	900
atcagcaaa	ccgaccaaag	actaaactcc	gaaggagcaa	gctatgaaga	gggactgatt	960
gagctgggat	tggacggacg	aaatgcccaa	ggtggactga	atcctgttta	tcattctccg	1020
ttaacgaaga	agatgtacga	cactctatcc	ggtaacaaaa	aattagtcgg	taagattgta	1080

atagaaccgg	aagaatactc	cggagaagtg	tatccccctga	atttaaatac	ccattggaat	1140
cgtagtgtact	acggccctat	ctggattccg	gcaaaggggtg	ccaccatcac	actgacccccg	1200
gacaatctgc	ccatttatga	acgggtgtatc	actgcttatg	aaggcaataa	actggaacag	1260
aaagaagacg	gaatctacat	caacgggtgtg	aagacaaacc	aatacacttt	ccagatggat	1320
tattattgga	tgatgggcga	taaccgtcat	aattccgcgcg	actccccgcta	ttggggattc	1380
gtaccggaag	atcacgtagt	aggtaaaccg	atcgctgtat	ggttatcatt	agataaagac	1440
cgtaactggg	tcgatggtaa	aatccgctgg	aaccgcacat	ttaagtgggt	agactga	1497

<210> 5184

<211> 339

<212> DNA

<213> B.fragilis

<400> 5184

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tctggccgga	attttatagg	taaacaaggc	gggaaactta	ttttgataat	ggtttgggat	120
gaaaaccaga	aaggggaacc	cggaaaaagg	cgtaaaggct	tatgggttct	tccgctgatt	180
gaaaaagaaa	ccgatataatc	cctgcgcgta	tttgatctcc	gcccacgacc	ttgggcgagg	240
aattatccgg	gtttctatga	agataaaagg	ctgttggacc	gatcgatatt	gcgtgcaata	300
tggacgcgca	cattttttga	tataaatgtt	gcattgttag			339

<210> 5185

<211> 1116

<212> DNA

<213> B.fragilis

<400> 5185

ttataccatg	taacgagaat	tcctatcttt	gcaatcagtg	ctttcagaca	aatacaaaact	60
atgtacaaga	acctgttcaa	tttactaact	attttactta	ttctgccttc	gtgcacagac	120
atgtctccta	acatttcggg	ggtttgcgaa	gagaataata	taggaaactg	tattctttaa	180
tgggaaacga	ctcctctcat	caaggggcag	gtgaaagtat	atacatccga	caatccggaa	240
ttcataccgg	aagataatcc	ggttgccatg	gccaatatct	ccgatgcgcg	aatgacgatt	300
gtgaccaacg	atccttccag	gcgcctcttat	tacatgctgg	tgttcaacga	taaatactgt	360
gtgaaagtgg	ctccccgcaa	cgtgaatatg	cccggcattc	aaaacttccg	tgacctggga	420
ggttacaaat	ccgccaccgg	aaagcatgta	cgttggggca	agctctaccg	ttcggcacag	480
atagacagcc	tgcattgctt	tgcctccagg	aaactgcaaa	acctgggtat	caagaccatt	540
ctggatctgc	gtcccgagag	cgaactccat	aatactcctc	ccttgcaaaa	gggattcaat	600
gtagtacata	tccccatcaa	cacgggcgac	atggaacata	tcctgcacgg	catacagcaa	660
gagaagatca	agacagatac	catttaccac	atggtagaag	cgatgaatcg	tgaactgggtg	720
gccaaatacc	aaaagggaata	taaagagatt	ttcgacatcc	tgctcgataa	aaacagttat	780
ccggtcgtga	ttcactgctc	gtcgggaaaa	ggacggacag	gcattgtatc	cgcaactgata	840
ctggcctctt	tagatgtcaa	tgcagatata	attatggaag	attaccgttt	gagcaacgat	900
tacttcaaca	tccccaaagc	ctccaaatac	gcctataacc	taccgggtcaa	ttcacaggaa	960
gccatcacca	ccctcttttc	ggcaaaaagaa	gactttctca	atgcagccaa	agacgagata	1020
gagcggaaat	acgggtgatgt	gcccacctat	ctgcgaaagg	caatcggcct	tcagtccgaa	1080
gacatacaca	ggttacgcac	catcttactg	gaataa			1116

<210> 5186

<211> 645

<212> DNA

<213> B.fragilis

<400> 5186

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ctggataaag	aaaagatcgg	tttccaaccc	attgataatg	tgaattggga	agcctaccct	120
tatcgctccga	aagtggagtt	ccgtatagca	catagcgatg	atgctgtttt	gttacacttc	180
aatgtaaaag	aggccagtgt	acggggccaag	tatggagaag	acgatggctc	cgtatggact	240
gattcctgtg	tggagttttt	ctctgtacct	accggcgacg	gtatctatta	taacatcgaa	300
tgcaactgta	ttggaaccat	tcttattggg	gcaggagcag	aacgcaacaa	ccgtgaacgc	360

gcttctcggg	aagtgcacaga	tcaggtgaaa	cgttggggcca	gtctgggacg	ccagcctttc	420
gatgaacgta	tcggtgagtg	caactgggag	gtggcattgg	tgattccata	tacagctttc	480
ttcaaacatc	acattacctc	tttggacggg	aaaacaatca	cagccaactt	ctataaatgt	540
ggcgacgaac	tgcaaatcc	gcatttctc	tcattggaatc	cgatcaaaat	agaaaagccg	600
gattttcacc	gtcccgaactt	cttcgggtacg	ttggaatttg	aatag		645

<210> 5187

<211> 1454

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (1400), (1421), (1422), (1427), (1441), (1442), (1447), (1449)

<223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5187

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cttggcggtt	ctccggagat	acgtaaagct	attgaagaga	tgggatacga	gaatcccatg	120
ccggtacagg	aggaagtgat	tccataccta	ttaggagaga	ataatgatgt	agtagctctt	180
gcacagacag	ggacgggtaa	gaccgcagcg	tttggcttgc	ccctcatcca	gaaaattaac	240
gtaaaaaaca	gaataacctca	atcactcggt	ctttgcccc	cacgcgagct	ttgcctccag	300
atagcaggcg	acctgaacga	ctattccaaa	tacatcgacg	ggctgaaagt	attgcccgtg	360
tacggcggtt	catccatcga	cagccagata	cgcagcctga	aacggggtatc	gcatactatt	420
gttgccacac	cagggcgact	cctcgacctg	atggaacgca	aaacgggtatc	tcttgccact	480
gtcacaaacg	tagtgatgga	cgaagcggac	gaaatgctca	atatgggctt	tacggacagt	540
atcaatgcca	tcttggcaga	tggttcgcaa	gaacgtaaca	cactgctttt	ctcggccact	600
atgagcccg	aaatagcccg	tatttcgaag	aactaccttc	acaatgcaaa	agagatcacc	660
atcggaacga	agaacgaaag	tacgagcaac	gtgaagcatg	tggtctatac	cgtacatgca	720
aaagataaat	acgccgctct	gaaacgcac	gtagactatt	atccgcagat	ttacgggtatc	780
atcttctgcc	gtacccgcaa	agagacacag	gagattgccg	ataaactgat	gcaggaaggt	840
tataacgctg	actcgttgca	cggagaactc	tcacaggcac	agcgtgacac	ggtgatgcag	900
aagttccgca	tccgcaacat	ccagatcctg	gtagccaccg	atgtagccgc	acgcggactg	960
gacgtagacg	acctgacaca	cgatcatcaac	tacggattgc	cggacgatac	ggaaagttat	1020
acgcaccgta	gcggaacgtac	aggacgtgcc	ggaaagacag	gtacatccat	cgccatcacc	1080
aattttgcgtg	aaaaaggaaa	gatgcgcgaa	atagaacgca	tcattcggtaa	gaaattcatt	1140
gccggtgaaa	tgcttaccgg	taagcagatc	tgcgagaaaac	agcttctcaa	agtgatagac	1200
gatcttgaaa	aagtaaagggt	aaacgaggag	gatatcaatg	atttcatgcc	tgagatttac	1260
cgtaaactgg	agtggctgag	ttaaagaagac	ctcatcaagc	gcatgggtatc	gcatgagttc	1320
aaccggtttg	tcgactatta	tcgcaaccgc	gaagaaatag	aggtgcccgc	cgatagccgc	1380
aggtcttcac	cacgggggtn	aatgccaaacg	ctattcagtt	nnttcnaac	gctgtctatt	1440
nntcctnanc	cgct					1454

<210> 5188

<211> 432

<212> DNA

<213> B.fragilis

<400> 5188

caaagggggc	cgtttttattt	ttactcacc	tttgaaacag	gaggaaaacc	gatgaagaga	60
ctggttggtc	tattggttgg	tttgggtcgt	gccgccttgt	ttatgtcagc	tgccaattcg	120
ggtgatcgtg	tactgctgta	cagtatcttt	catgtctatc	ggtcgatgcc	tgccgacacc	180
actcggaccg	tttttgcgaa	agaggctgca	atgggacacg	ttaaagaaag	ctgggcgttg	240
gagttactgg	attcggcatt	ggtgttttgc	cgggagataa	aagatgtgga	gggtgagttg	300
gaactccaat	acgggatttt	tcgttactat	acgttcagga	tggacgggtga	gaatatggaa	360
aagacgtgtg	ccaccctgag	ggaagcgtgt	tatcgttatg	tcttcaccac	ggggctggaa	420
ggggccgctc	ta					432

<210> 5189

<211> 1128
 <212> DNA
 <213> B.fragilis

<400> 5189
 gttatctttg ctaaccttac acaaaatata aagatgaaac agcttatatt gtcagggatg 60
 ttcgttgtat gtggattgtc cgtatccctt gcttctgaaa agtgggctgt ggatagcata 120
 aactggcatc gtgcagagca gaaaatgcaa gagaaggatt ttcaggatgc agcactgaca 180
 tataaggaat tgattacgaa aggagattct ttgtttgtgg attatgccgg ccggcatggt 240
 gaggatatgc gtgaacaata ttccattgac gagttggact tacaaaacgg aatgcagcag 300
 aagaaaatat ggaaatttgt gtttatcacc attctatgtc tggccgtttt gttattcgta 360
 ggacttctct atttgaggag agcggagaga aaacttctat tttccagaga agagttgcaa 420
 aaggcaaaaa ggctggccga agagtctgtc cgtaataaga gcgtatttct ttccaatatg 480
 agccatgaga taaaaactcc cttaaagtcg ttggcagggt tctctgaaat tttgattact 540
 ccgggaattg acgatgaagt tcgtgctgag tgtaatgacg tgatcagggt aaactccgat 600
 ttattgttgc atttggtaaa tgacgtagtc gatgtttcgt gtctggatgt ggcaaatatg 660
 agattctccg tggttccgca tgaggtggtg gctttatgcc ggaatgtggt ggagatgctg 720
 agaaatatca aacagacttc tgcggagatg atttttgaga cagaattgtc tgctttggaa 780
 atggaaactg atccgtgcag gctccagcaa gtattgatca acctactggt caatgccaca 840
 aaatttacga aggagggata tatcacattg aactgcgga taaatgaagc cggggtacct 900
 gaggtttatg taacggatac cgggtgtgga attcccttg aaaatcaaga ggctgtattc 960
 agtcggttcg aaaaactcaa tgaaggcatc cagggtacag ggctggggct gtctatctgt 1020
 aagctgatca ttaatcgtat gggaggagac atccgggttg actccactta tagcaaaggg 1080
 gcccgtttta tttttactca ccctttgaaa caggaggaaa accgatga 1128

<210> 5190
 <211> 375
 <212> DNA
 <213> B.fragilis

<220>
 <221> unsure
 <222> (137)
 <223> Identity of nucleotide sequences at the above locations are unknown.

<400> 5190
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 accggtatct acgaagctat cgagaaagcg gtatgtgccg tagacgcgtg tgtgaaagat 120
 accattgaag cagccanagc tcaagggtac gaagctatca tcattgccga tcattggtaac 180
 cctgaccatg ctttgaatga agacggatcc ccgaatacgg ctactcttt gaatcctgta 240
 ccttgtgtat acgtgacaga gaataaagaa gcgaaagtgg cagacggacg tttggcagat 300
 gtggcgctta ccactctgca tattttggat atggttcaac cggctgagat gacaggttgc 360
 aatttgatta aataa 375

<210> 5191
 <211> 561
 <212> DNA
 <213> B.fragilis

<400> 5191
 aacaaattat caaatcccat gcataccacc attttagaaa ccgaacgtct ccttcttcgt 60
 cctttccggg aaacggatct gcaagagctc tttgaatgtt gccaaaaccc aaacttagga 120
 aataacgccg gctgggaacc acataaaaaat atcgaagatt ccaaagaggt ctacatact 180
 gtattttatg gaaatgaagg agtttttgcc ataattctca aagaagataa ttcactggtg 240
 ggttctatcg gtattattac tgaccccaaa cgggaaaata cccggacacg tatgctggga 300
 tactggctga aagagtgcc aatgggaaaa ggtatggcct cggaagcgac acgaaccata 360
 ttggattatg gatttaacgt actgggattg catttgattt cagcgaactg ttatccgcat 420
 aacacccgtt cccgactttt attggaacgg aacggatttg tatacgaagg tatactccat 480
 gaagcagaaa tgacttatga cggacatgta tacgaccatt tatgctttta tcagaaaaaa 540

ggaagagtgc ccatggacta a

561

<210> 5192

<211> 198

<212> DNA

<213> B.fragilis

<400> 5192

cacagggttc	cacaaagtga	acttaatcta	ttgataacta	acgatgctga	tctgtggcgt	60
atccgggttt	tgacacatcc	tcatttgggt	tactcgctct	atztattta	aaaacgaaag	120
aaaatccatc	ctgtaacatt	ggttacaaat	tatttgtatc	tcatttccga	cctttgcca	180
ctgaataata	aaagatga					198

<210> 5193

<211> 348

<212> DNA

<213> B.fragilis

<400> 5193

aatgaaaaaa	caaataagaa	tatggaacag	tcattcaaaa	agggaattgt	actccatcta	60
gcctcattag	tagaatattc	tgaagggtgga	attatcagta	agcagttaat	caaaagccct	120
gccggaaaca	ttactttatt	ctcattcgac	aaaggcgaag	gacttagcga	acacagtgtc	180
ccattcgatg	ctttagtaca	ggtattggaa	ggatctgcga	atattgttgt	aaatggacaa	240
gtttttacgg	taaatgcagg	agaaagtatt	gtatttccgg	ctaagcgcc	gcatgcattg	300
acagctattg	aaagatttaa	aatgttactg	acaatgatta	aagagtag		348

<210> 5194

<211> 1215

<212> DNA

<213> B.fragilis

<400> 5194

tctaacagag	cgacaatgaa	ctcaaaaaaa	gtacttttca	tcattctcat	ttgtacattg	60
actgtgaccg	gatgcgatac	acaagaacaa	actactatag	atagtggctt	aactctgata	120
cgggctacac	aaacacttga	ttctttatat	gcaaattatt	ctgtatcagg	aacctgtctg	180
ttaatagaga	attatccttc	taatgttaga	aattacacag	ccacgtatct	ggcttctgaa	240
gaacaaaaag	aaatccccaa	tcaatattct	tacttatggc	cttattccgg	gacattttct	300
gctgtaaatg	cactatgggc	agcaaccggg	gatgagagct	ataagacatt	actcgataac	360
aagggtattg	ggggacttga	aaaatattta	gatatcagca	gaagccctgc	cggttatgcc	420
tcgtacataa	acacggcttc	ccaatccgac	cgcttctacg	atgataatat	ctgggtgggt	480
attgacttca	cagatgctta	tctaaataca	aaagaagaaa	aatacctgaa	gaaagcccag	540
cttatctggg	aatttataga	gagtggagca	gatgacaaat	taggcggagg	tatctattgg	600
tgtgagcaaa	agaaagtatc	taaaaataca	tgttctaacy	caccggcatc	agtgttcgca	660
ttaaaaatgt	tcaaagctat	ccgagatagt	tcttacctga	taaaagggca	ggaactatat	720
gagtggacta	aaaaaagact	gcaagattcg	accgattatt	tatactttga	caatatctct	780
ttggatggga	aaattgataa	gtctaaatat	gcctacaata	gtgggcaa	gatgcaggct	840
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gcaaaagcgt	gttataacta	tttttttata	aattttatac	ctgaagaagg	ggaacctttc	960
aaactcctta	aaaaggggga	tgtatggttt	actgccgtta	tgctgagagg	gttcattgaa	1020
ctctaccaaa	ctgaccataa	taaaacatat	atcaactctt	tcaatcaaaa	catggattat	1080
gcatgggaac	atgtgctgta	tgagaaggga	cttttcgata	tcgatttcag	tggaagaacc	1140
catgatgacc	gcaagtggct	gttaacgcaa	gctgctatgg	tagagatgta	tgctcggtta	1200
gcagtaacta	aataa					1215

<210> 5195

<211> 933

<212> DNA

<213> B.fragilis

<400> 5195

tatgacatgg	caaaaataca	aattaaatct	gagaaactca	caccttttgg	aggaattttt	60
tcaatcatgg	agaaatttga	ctccatgctt	tcaccogtta	tcgactcaac	actgggtcag	120
agatgcagca	gtatcttcgg	atatcagttc	agcgagatag	tccgttcgct	gatgagcggt	180
tatttctgtg	gcggctcatg	cgtggaagat	gtaacgtcac	aactgatgcg	ccatctctcg	240
tatcatccta	cccttcgtac	atgcagctct	gataccatcc	tcagagccat	caaggaactg	300
acacaggaaa	acatctccta	tacttccgac	caaggcaaga	cctatgattt	caatactgca	360
gacaaactca	acacattgct	tataaacgct	ttggtttcta	caggcgagtt	gaaggaaatt	420
gaggaatacg	atgttgactt	tgaccatcag	ttccttgaaa	cggagaagta	tgatgcaaaa	480
ccgacctaca	aaaagttcct	cggctacagg	cctggcgat	atgttatcgg	tgacaagata	540
gtctatatcg	agaacagcga	tggtaacacg	aatgtgcgtt	ttcatcaggc	agacacccat	600
aagagattct	tcgctcttct	ggaatcccag	aacatccgtg	taaatcgctt	cagggcagac	660
tgccggttct	gctcgattga	aatcgtcagt	gagatagaga	agcattgcaa	acatttctac	720
atccgtgcca	accgatgcag	ttcgctctac	aatgacatct	ttgctctgag	aggatggaag	780
acggaggaga	ttaacggcat	ccagttcgac	ctcattccat	tcttggtgag	aaatgggaag	840
gcaagtgcta	tcgtcttgtc	atccagagac	aaagacgcaa	cagtggcgac	cttgacctgt	900
gggaaggcga	atacacttac	cgatgcattc	tga			933

<210> 5196

<211> 690

<212> DNA

<213> B.fragilis

<400> 5196

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atatatgtta	tcaccccccta	ttggggattc	cgctcgctat	ggaagcattt	tctattcgat	600
ctatcgggtg	gagtcggcta	tatcggatcc	tcaaatagaa	cttctgcgct	ttatccgggt	660
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<210> 5197

<211> 1290

<212> DNA

<213> B.fragilis

<400> 5197

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ggaacaggcg	gaacttttct	tcagggggtta	gtctttctat	gtgtacttgc	tatcttgctt	300
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gcctctctgg	cagtatatct	gacagcggaa	tatctttttg	tgattttggt	ggctgttcag	1260
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<210> 5198

<211> 252

<212> DNA

<213> B.fragilis

<400> 5198

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gtgttgcaaa	aagaaaacaa	gcaaaactct	aatatgacat	ggcaaaaata	caaattaaat	120
ctgagaaaact	cacacctttt	ggaggaattt	tttcaatcat	ggagaaattt	gactccatgc	180
tttcacccgt	tatcgactca	acactgggtc	agagatgcag	cagtatcttc	ggatatcagt	240
tcagcgagat	ag					252

<210> 5199

<211> 255

<212> DNA

<213> B.fragilis

<400> 5199

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agtacttttt	ttgagttcat	tgtcgcctctg	ttagattatt	attgtgtatc	attactttct	180
tttaaagagg	atatttttaa	gatatacctct	tttcctttgt	ttataaaacc	tctttcacct	240
aatcaatttc	tctaa					255

<210> 5200

<211> 696

<212> DNA

<213> B.fragilis

<400> 5200

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acctatacgg	cagatgaatg	caaactgtac	gtaaatcagt	tttatacctc	attttggggc	180
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tatcaagata	acaaaagactt	gattgaaggt	ttgcaccagg	ttccttccag	tggcgaaggc	300
tggggaacta	ctgaatggggg	aaaaatacgc	agtgtcaact	ttttgttgga	taactgtgac	360
aagtctcccc	aaccggaaaaa	agcccgcaaa	tacattgggtg	aagcttactt	cttttagagct	420
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accggacgtg	tctcaaaaaga	ggcagctatg	ctatacaaaag	cacgaattgc	cctgttgtct	660
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<210> 5201

<211> 1893

<212> DNA

<213> B.fragilis

<400> 5201

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tttacaatct	catgtgtaaa	tgaaatttca	gaagatcctg	tagatattcc	cggagagata	120
cccatccgtc	tttctacaca	aattttatgt	aaccacacac	gtgctatcaa	taacgaattt	180

caggaaaaag	atgccatcgg	tctgtatgta	ttgacacaat	tatcaaccat	caaccagaaa	240
cgatacattg	acaatatgcg	tttcacatgt	tcccaagcaa	ccggtttcga	accagaagaa	300
acaatctatt	atcccaaggg	agacggtaaa	tgtgatttta	taagttatta	cccttttcaa	360
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agtcaaaata	tggatatctat	ggaatataaa	cataaaactct	gcaaactgaa	aatcactata	540
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ggcgtaattc	atctctcagc	tctaaaattc	agtaaaagta	acgttttata	ggcaattaat	1020
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caagccattg	togtctatcc	cgtcctaaac	ggagcaacag	atctgaataa	cggaacagta	1140
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tataccaacg	gcttatatac	ggtggtatatac	tgggtctacca	attcatctgg	aaatcaaaca	1800
aacagagcaa	tctattttgct	gcataccaca	aatgaaataa	aagatggtaa	tataacagac	1860
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<210> 5202

<211> 834

<212> DNA

<213> B.fragilis

<400> 5202

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agatttgaaa	ataagataat	cattatcacg	ggagctgccg	gtggaatcgg	cgcatcaacc	120
acacgccgca	ttgtatctga	aggcggcaaa	gtaattattg	ctgactattc	aagagaaaaa	180
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cagatcgatg	tactgggtaaa	caatgtagga	ggtacaaatc	ccagacggga	cacaaacatc	360
gaaactctgg	atatggatta	ttttgacgaa	gccttccatc	tgaatttatc	ttgtaccatg	420
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gaggtacgca	aaatatttct	cgggcaatgt	gcgacaccct	atttaggtga	accgcaagat	720
gttgccgcga	ccatcgcttt	tttagcctcc	gaagatgcac	gttacattac	cggacagacc	780
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<210> 5203

<211> 216

<212> DNA

<213> B.fragilis

<400> 5203

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ctcgaatgca ctgggtcagca tatcataatc agcgtcgctg tattctcctt tttcccttac 180
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<210> 5204

<211> 963

<212> DNA

<213> B.fragilis

<400> 5204

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 ttagttggag cacttgtaag tgctttcctg ttggcttctt gctcaggcgg ggataagagt 180
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 aatacttcgc ttgggggtgtt gaaagatatg gtgaaggaaa aagatgtaaa tgctgtattg 300
 gattatatgg aacaaaaaagg aaaagccccg gctctttctg ccattgttcc tccggccggt 360
 gtttcaaaag actcggcaat agtgttgaat ccgggtaact gtttcaacga ggagaccgcg 420
 cagaatctga aacagaacta taccggattg tttcaggcaa ggacagaatt ttatgccaac 480
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<210> 5205

<211> 271

<212> DNA

<213> B.fragilis

<400> 5205

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 catcaagcag gaatccggta gttggaagtg ggctatcttc acggcaggat ataccacggc 180
 gttggcatgg cttgtttcat ttgccgtcta tcagatagga ggaatgttta gcccaatagc 240
 atggatgtca aacttgctca tgatggtcta g 271

<210> 5206

<211> 471

<212> DNA

<213> B.fragilis

<400> 5206

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<210> 5207

<211> 861

<212> DNA

<213> B.fragilis

<400> 5207

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<210> 5208

<211> 405

<212> DNA

<213> B.fragilis

<400> 5208

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<210> 5209

<211> 738

<212> DNA

<213> B.fragilis

<400> 5209

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gagttcgata	aaccctattt	cgaaaaatta	gtgaactttg	tcaagaatga	atacgggaag	180
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<210> 5210

<211> 3189

<212> DNA

<213> B.fragilis

<400> 5210

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atacaagtaa	aaggtaaggt	tgtagacaat	attggcggaac	ctgtaattgg	tgctaattgta	180
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<210> 5211

<211> 318

<212> DNA

<213> B.fragilis

<400> 5211

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tacaatctgc	gtggcggcaa	ggaacgtatc	tttgacgaca	tgaacaacgg	attcagttgg	240
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<210> 5212

<211> 741

<212> DNA

<213> B.fragilis

<400> 5212

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<210> 5213

<211> 204

<212> DNA

<213> B.fragilis

<400> 5213

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<210> 5214

<211> 2448

<212> DNA

<213> B.fragilis

<400> 5214

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<211> 225

<212> DNA

<213> B.fragilis

<400> 5215

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tgtaagcccc	atgtcgggca	agagagatgg	cgttttgaca	atcagtgcgg	gtgctcacac	180
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<210> 5216

<211> 405

<212> DNA

<213> B.fragilis

<400> 5216

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atgtacacct	ataaggggaa	gctcaaatac	agaccgtatc	caccggggct	tacacaggag	360
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<210> 5217

<211> 1200

<212> DNA

<213> B.fragilis

<400> 5217

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<210> 5218

<211> 435

<212> DNA

<213> B.fragilis

<400> 5218

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accgtaacag	cggctaaccg	aacgagacc	tcagccagta	tagcggatc	tcaggcaggt	180
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<210> 5219

<211> 762

<212> DNA

<213> B.fragilis

<400> 5219

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<210> 5220

<211> 1083

<212> DNA

<213> B.fragilis

<220>

<221> unsure

<222> (924), (1039)

<223> Identity of nucleotide sequences at the above locations are unknown.

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<210> 5221

<211> 216

<212> DNA

<213> B.fragilis

<400> 5221

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gaaggggata	aatctagtat	aaaaatcaga	ctcattcatt	tactaaagaa	tgaattaatg	180
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<210> 5222

<211> 2256

<212> DNA

<213> B.fragilis

<400> 5222

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gaaattgcc a ttcgtaaggt gaatggggct gagtcgggaa atattattaa tcttttgaat 2100
cataatattt tctggattgc tttaccggct atctttgttg gaatcgcttt agcctatgtc 2160
gtcggacata aatgggtgga acaatttacc gatcagatcg tcctgtcttc accgcgggat 2220
gtgagcgacc aaggggggtca gtaccacggg ggtcag 2256

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<210> 5223

<211> 139

<212> PRT

<213> B.fragilis

<400> 5223

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Asn Lys Glu Arg Phe Arg Thr Ile Phe His Gln Glu Thr Asn Asp Gln
1          5          10          15
Thr Lys Ala Val His Phe Leu Leu Asp Gln Gly Lys Lys Thr Ile Ile
20          25          30
Leu Val Gly Ala Thr Gly Lys Arg Glu Asp His Thr Leu Gly Asn Ile
35          40          45
Ser Leu Leu Ile Asp Tyr Met Lys Ala Gly Ala Gln Val Thr Met Leu
50          55          60
Thr Asp His Gly Met Phe Ile Pro Ala Ser Gly Arg Asn Cys Phe Lys
65          70          75          80
Ser Tyr Pro Gly Gln Gln Ile Ser Ile Phe Asn Phe Asn Ala Thr Gly
85          90          95
Leu Arg Ala Asp Gly Leu Val Tyr Pro Leu Ser Asp Phe Ser Asn Trp
100         105         110
Trp Gln Gly Thr Leu Asn Glu Ala Thr Gly Thr Glu Phe Thr Ile His
115         120         125
Ala Glu Gly Asp Tyr Leu Val Tyr Leu Asn Tyr
130         135

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<210> 5224

<211> 611

<212> PRT

<213> B.fragilis

<400> 5224

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Ser His Arg Ser Ile Leu Pro Ala Pro Trp Gly Arg Gln Thr Thr Gly
1          5          10          15
Phe Glu Thr Ala Ala Val Gln Lys Ser Val Ser Val Leu Pro Thr Gln
20          25          30

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Thr	Tyr	Tyr	Thr	Phe	Thr	Cys	Gly	Pro	Val	Glu	Leu	Asp	Leu	Val	Phe
	35						40					45			
Thr	Ala	Pro	Leu	Met	Met	Asp	Asp	Leu	Asp	Leu	Leu	Ser	Thr	Pro	Val
	50					55					60				
Asn	Tyr	Ile	Ser	Tyr	Arg	Val	Arg	Ser	Leu	Asp	Lys	Lys	Gln	His	Asp
65					70					75					80
Val	Gln	Met	Tyr	Val	Glu	Thr	Thr	Pro	Gln	Leu	Ala	Ile	Asn	Glu	Leu
				85					90					95	
Thr	Gln	Pro	Thr	Arg	Ser	Lys	Val	Ile	Arg	Arg	Asn	Gly	Ile	Asn	Tyr
			100					105					110		
Val	Gln	Ala	Gly	Thr	Ile	Asp	Gln	Pro	Ile	Leu	Ala	Arg	Lys	Gly	Asp
		115					120					125			
Gly	Ile	Cys	Ile	Asp	Trp	Gly	Tyr	Ala	Tyr	Leu	Ala	Gly	Asn	Ile	Gly
	130					135						140			
Ala	Asn	Thr	Ala	Val	Ser	Leu	Gly	Asn	Tyr	Tyr	Gly	Met	Lys	Asn	Glu
145					150					155					160
Phe	Ala	Thr	Lys	Gly	Ser	Leu	Leu	Pro	Thr	Gln	Ala	Glu	Cys	Val	Thr
				165					170					175	
Arg	Arg	Ala	Asp	Gln	Met	Pro	Ala	Met	Ala	Tyr	Thr	Asp	Asp	Leu	Gly
			180					185					190		
Glu	Val	Gly	Thr	Asp	Gly	Lys	Ser	Gly	Phe	Leu	Met	Leu	Gly	Tyr	Asp
	195						200					205			
Asp	Ile	Tyr	Ala	Ile	Glu	Tyr	Phe	Tyr	Gln	Pro	Arg	Met	Ala	Tyr	Trp
	210					215					220				
Lys	His	Asp	Gly	Lys	Val	Ser	Ile	Phe	Asp	Ala	Phe	Glu	Arg	Ala	Lys
225					230					235					240
Ala	Asn	Tyr	Ala	Ser	Val	Met	Glu	Arg	Cys	Arg	Ala	Tyr	Asp	Glu	Met
				245					250					255	
Ile	Leu	Asn	Asp	Ala	Glu	Lys	Ala	Gly	Gly	Lys	Glu	Tyr	Ser	Glu	Leu
			260					265						270	
Cys	Ala	Leu	Ala	Tyr	Arg	Gln	Val	Ile	Ala	Ala	His	Lys	Leu	Phe	Lys
		275					280					285			
Asp	Ala	Asp	Gly	Asn	Leu	Leu	Phe	Phe	Ser	Lys	Glu	Asn	Asn	Ser	Asn
	290					295					300				
Gly	Cys	Ile	Asn	Thr	Val	Asp	Leu	Thr	Tyr	Pro	Ser	Ala	Pro	Leu	Phe
305					310					315					320
Leu	Ala	Tyr	Asn	Pro	Glu	Leu	Gln	Lys	Gly	Met	Met	Thr	Ser	Ile	Phe
			325						330					335	
Glu	Tyr	Ser	Ala	Ser	Gly	Arg	Trp	Asn	Lys	Pro	Phe	Pro	Ala	His	Asp
			340					345					350		
Leu	Gly	Thr	Tyr	Pro	Ile	Ala	Asn	Gly	Gln	Val	Tyr	Gly	Gly	Asp	Met
		355					360					365			
Pro	Ile	Glu	Glu	Gly	Gly	Asn	Met	Val	Val	Leu	Ala	Ala	Ala	Ile	Ala
	370					375					380				
Lys	Val	Glu	Gly	Asn	Ala	Asp	Tyr	Ala	Lys	Lys	Tyr	Trp	Asp	Leu	Leu
385				390						395					400
Thr	Ile	Trp	Thr	Asp	Tyr	Leu	Ala	Glu	Tyr	Gly	Gln	Asp	Pro	Glu	Asn
			405						410					415	
Gln	Leu	Cys	Thr	Asp	Asp	Phe	Ala	Gly	His	Trp	Ala	His	Asn	Ala	Asn
			420					425					430		
Leu	Ser	Val	Lys	Ala	Ile	Met	Gly	Val	Ala	Ala	Tyr	Ser	Glu	Met	Ala
		435					440					445			
Arg	Met	Leu	Gly	Met	Asp	Asp	Val	Ala	Asp	Arg	Tyr	Ala	Ala	Lys	Ala
	450					455					460				
Lys	Ala	Met	Ala	Thr	Lys	Trp	Glu	Gln	Met	Ala	Arg	Glu	Gly	Asp	His
465					470					475					480
Tyr	Arg	Leu	Ala	Phe	Asp	Arg	Glu	Asn	Thr	Trp	Ser	Gln	Lys	Tyr	Asn
				485					490					495	
Met	Val	Trp	Asp	Lys	Met	Trp	Asn	Leu	Asn	Leu	Phe	Pro	Asn	Asn	Val

[illegible]

<210> 5225

<211> 249

<212> PRT

<213> B.fragilis

<400> 5225

Cys 1	Gly	Gly	Leu	Phe 5	Arg	Trp	His	Val	Leu 10	Thr	Lys	Ser	Arg	Met 15	Thr
Arg	Asn	Thr	Trp 20	His	Met	Pro	Leu	Arg	Asp 25	Ser	Thr	His	Val	Trp 30	Lys
Glu	Ser	Tyr	Asp 35	Lys	Glu	Arg	Gly	Gly	Leu 40	Trp	Trp	Asn	Phe	Lys 45	His
Asp	Gly 50	Lys	Met	Ala	Cys	Ile 55	Asn	Tyr	Pro	Thr	Thr 60	Val	Gly	Ala	Met
Thr 65	Leu	Tyr	Asn	Val	Thr	Lys 70	Asp	Pro	Asp	Tyr 75	Leu	Glu	Lys	Ala	Lys
Ser	Val	Tyr	Ala	Trp 85	Ser	Arg	Asp	Val	Phe 90	Asp	Lys	Glu	Lys 95	Gly	Gly
Arg	Ile	Ala	Asp 100	Asn	Met	His	Tyr	His 105	Phe	Gln	Arg	Gln	Asn 110	Gly	Met
Asp	Ile	Asp 115	Trp	Thr	Thr	Gln	Leu 120	Tyr	Asn	Gln	Ala	Thr 125	Phe	Ile	Gly
Ser	Ala 130	Val	Met	Leu	Tyr	Lys 135	Ala	Thr	Gly	Glu	Lys 140	Ala	Tyr	Leu	Asp
Asp 145	Ala	Val	Leu	Ala	Ala	Asp 150	Tyr	Val	Arg	Asn	Glu 155	Met	Cys	Asp	Ala
Asp	Gly	Leu	Leu 165	Pro	Phe	Lys	Asn	Gly	Val 170	Glu	Gln	Gly	Ile	Tyr 175	Ala
Ala	Ile	Phe	Ala 180	Gln	Tyr	Ile	Ile	Arg 185	Leu	Ile	Glu	Asp	Gly 190	Asn	Gln
Pro	Gln	Tyr 195	Met	Asp	Trp	Leu	Arg 200	His	Asn	Ile	Asp	Val 205	Ala	Trp	Asn
Asn	Arg 210	Asp	Val	Asn	Arg	Asn 215	Val	Thr	Phe	Lys	Asp 220	Ala	Thr	Lys	Pro
Cys 225	Pro	Thr	Gly	Val	Met	Glu 230	Ser	Tyr	Asp	Ala 235	Ser	Gly	Cys	Pro	Ala
Leu	Met	Gln	Val	Ile 245	Ser	Pro	Phe	Lys							

<210> 5226

<211> 481

<212> PRT

<213> B.fragilis

<400> 5226

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Leu Lys Leu Ser Val Leu Ile Leu Ala Thr His Gln Leu Met Leu Phe
1      5      10      15
Ile Val Gln Val Leu Val Val His Gly Thr Leu Cys Ile Asn Gly Tyr
20      25      30
Leu Leu Phe Gly Leu Val Gln Gly Phe Thr Gln Leu Ile Asp Ala Pro
35      40      45
Val Ile Ile Ser Ile Phe Gln Arg Thr Gly Gly Ile Phe Ile Asp Ala
50      55      60
Tyr Ile Ile Arg Tyr Val Ala Gln Leu Ile Val Ile Phe Ile Thr Glu
65      70      75      80
Thr Ser Gly Arg Arg Asn Leu Arg Met Asn Ser Ile Cys Thr Val Phe
85      90      95
His Ser Phe Pro Lys Ser Phe Tyr Ile Val Thr Phe Gln Ser Phe Gln
100     105     110
Ile Gly Ile Ser His Tyr Arg Ser Gly Ile Val Thr Tyr His Thr Ala
115     120     125
Pro Val Pro Gly Thr Cys Pro Phe Gly Lys Glu Ser Ala Phe Leu Val
130     135     140
Ser Ile Cys Gln Ser Leu Leu His Leu Phe Val His Arg Arg Ile His
145     150     155     160
Gln Val Glu Glu Arg Glu Gln Ala Ala Glu Cys Ile Pro Glu Thr Gly
165     170     175
Ile Gly Lys His Ile Ser Arg Gln His Phe Thr Val Val Gly Thr Val
180     185     190
Met Tyr Arg Phe Pro Phe Gly Ile Gln Phe Val Glu Ala Ser Arg Glu
195     200     205
Lys Tyr Arg Thr Ile Glu Ala Arg Val Glu Cys Thr Glu Met Ile Gly
210     215     220
Ile Ile Val Phe His Leu Asn Thr Ser Gln Asn Leu Val Pro Phe Leu
225     230     235     240
Ala Ser Phe Gly Cys Asn Ser Phe Gln Ile Val Phe Thr Gln Leu Phe
245     250     255
Gln Val Leu Phe Cys Leu Leu Gly Ala Asp Lys Arg Arg Ser His Ser
260     265     270
Tyr Val Asp Arg Leu Ser Thr Thr Cys Arg Glu Pro Asp Asp Thr Thr
275     280     285
Cys Met Phe Ile Phe Arg Phe Gln Leu Thr Arg Thr Asp Val Ala Val
290     295     300
Gly Asn Cys Cys Gly Lys Ser Glu Arg Leu Ile Glu His Gln Tyr Lys
305     310     315     320
Ile Ile Leu Lys Val Leu Arg His Ser Ser Thr Val Leu Gly Cys Val
325     330     335
Ala Asp Asp Leu Val Leu Phe Arg Asn His Phe His Ile Arg Thr Val
340     345     350
Val Glu Ser Ile Tyr His Tyr Ile Arg Ile Leu Thr Leu Arg Lys Ser
355     360     365
Glu Thr Lys His Arg Arg Thr Ala Gly Arg Ser Asn Phe Gly Arg Asp
370     375     380
Ile Met Ile Gly Gln Ile Tyr Phe Ile Ile Ile Arg Phe Gly Asn Leu
385     390     395     400
Ser Leu Met Arg Glu Pro Ala Arg Thr Leu Ile Leu Ile Glu His Asp
405     410     415
Leu Ser Arg Asn Arg His Asn Gly Lys Leu Pro Val Val Ile Asn Pro
420     425     430
Arg Ala Gly Leu Val Ser Leu Leu Lys Ser Pro Asp Phe Ile Gly Ile
435     440     445
Ile Gly Ile Ser Pro Ser Ile Thr His Leu Ser Gly Leu Cys His Pro

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450		455		460
Glu Val His Ser Pro Arg	His Gly Asn Ser Arg	Ile Cys Ile Ser Gly		
465	470	475		480
Arg				

<210> 5227

<211> 788

<212> PRT

<213> B.fragilis

<400> 5227

Ser Phe Phe Pro Leu Ile Leu Lys Ile Lys Lys Thr Val Leu Val Arg	
1	5 10 15
Val Ile Cys Gly Glu Phe Lys Thr Ile Asn Ile Met Lys Lys Leu Ala	
	20 25 30
Leu Leu Leu Val Gly Val Leu Gly Thr Ala Phe Cys Thr Phe Ala Lys	
	35 40 45
Ser Thr Thr Glu Pro Val Asp Tyr Val Ser Pro Leu Val Gly Thr Gln	
50	55 60
Ser Lys His Ala Leu Ser Thr Gly Asn Thr Tyr Pro Ala Ile Ala Met	
65	70 75 80
Pro Trp Gly Met Asn Phe Trp Val Ala Gln Thr Gly Lys Met Gly Asp	
	85 90 95
Gly Trp Ala Tyr Thr Tyr Asp Ala Asp Lys Ile Arg Gly Phe Lys Gln	
	100 105 110
Thr His Gln Pro Ser Pro Trp Ile Asn Asp Tyr Gly Gln Phe Ala Ile	
	115 120 125
Met Pro Val Thr Gly Lys Val Val Phe Asp Gln Asp Gln Arg Ala Ser	
	130 135 140
Trp Phe Ser His Lys Ala Glu Val Ala Lys Pro Tyr Tyr Tyr Lys Val	
145	150 155 160
Tyr Leu Ala Asp His Asp Val Thr Thr Glu Ile Ala Pro Thr Ser Arg	
	165 170 175
Ala Ala Met Phe Arg Phe Thr Phe Pro Glu Ser Lys Asp Ser Tyr Val	
	180 185 190
Val Val Asp Ala Phe Asp Asn Gly Ser Tyr Val Lys Val Ile Pro Glu	
	195 200 205
Glu Asn Lys Ile Ile Gly Tyr Thr Thr Lys Asn Ser Gly Gly Val Pro	
	210 215 220
Glu Asn Phe Lys Asn Tyr Phe Val Leu Val Phe Asp Lys Pro Phe Thr	
225	230 235 240
Phe Thr Ala Ala Val Thr Asn Gly Asn Ile Arg Pro Gly Glu Leu Glu	
	245 250 255
Ser Lys Asp Lys His Ala Gly Gly Ile Ile Gly Phe Ser Thr Arg Arg	
	260 265 270
Gly Glu Thr Val Asn Val Arg Val Ala Ser Ser Phe Ile Ser Pro Glu	
	275 280 285
Gln Ala Glu Gln Asn Leu Lys Glu Leu Gly Lys Asp Asn Leu Glu Ala	
	290 295 300
Val Ala Ala Lys Gly Arg Gln Glu Trp Asn Lys Val Leu Gly Arg Ile	
305	310 315 320
Glu Val Glu Asp Asp Asn Thr Asp His Leu Arg Thr Phe Tyr Ser Cys	
	325 330 335
Leu Tyr Arg Ser Val Leu Phe Pro Arg Ser Phe Tyr Glu Leu Asp Ala	
	340 345 350
Lys Gly Lys Pro Val His Tyr Ser Pro Tyr Asn Gly Lys Val Leu Pro	
	355 360 365
Gly Tyr Met Phe Thr Asp Thr Gly Phe Trp Asp Thr Phe Arg Cys Leu	

370		375		380
Phe Pro Phe Leu Asn Leu Met Tyr Pro Ser Met Asn Glu Lys Met Gln				
385		390		400
Glu Gly Leu Ala Asn Thr Tyr Lys Glu Ser Gly Phe Leu Pro Glu Trp				
	405		410	415
Ala Ser Pro Gly His Arg Gly Cys Met Val Gly Asn Asn Ser Ala Ser				
	420		425	430
Val Val Ala Asp Ala Tyr Leu Lys Gly Leu Lys Gly Tyr Asp Ile Glu				
	435		440	445
Thr Leu Trp Glu Ala Val Lys His Gly Ala Asn Ala Val His Pro Gln				
	450		455	460
Val Ser Ser Thr Gly Arg Leu Gly Tyr Glu Tyr Tyr Asn Gln Leu Gly				
465		470		480
Tyr Val Pro Tyr Asn Val Gly Ile Asn Glu Asn Ala Ala Arg Thr Leu				
	485		490	495
Glu Tyr Ala Tyr Asp Asp Trp Cys Ile Tyr Gln Leu Gly Lys Ala Leu				
	500		505	510
Asn Lys Pro Glu Glu Glu Ile Ala Val Tyr Ala Gln Arg Ala Met Asn				
	515		520	525
Tyr Lys Asn Leu Tyr Asp Lys Glu His Lys Leu Met Arg Gly Lys Asn				
530		535		540
Lys Asp Gly Gln Phe Gln Ser Pro Phe Asn Pro Leu Lys Trp Gly Asp				
545		550		560
Ala Phe Thr Glu Gly Asn Ser Trp His Tyr Thr Trp Ser Val Phe His				
	565		570	575
Asp Pro Gln Gly Leu Ile Asp Leu Met Gly Gly Gln Gln Gly Phe Asn				
	580		585	590
Gln Met Met Asp Ser Val Phe Ile Leu Pro Pro Val Phe Asp Asp Ser				
	595		600	605
Tyr Tyr Gly Gly Val Ile His Glu Ile Arg Glu Met Gln Ile Met Asn				
610		615		620
Met Gly Gln Tyr Ala His Gly Asn Gln Pro Ile Gln His Met Leu Tyr				
625		630		640
Leu Tyr Asn Tyr Ser Gly Gln Pro Trp Lys Ala Gln His Trp Ile Arg				
	645		650	655
Glu Val Met Asp Lys Leu Tyr Thr Pro Asn Ala Asp Gly Tyr Cys Gly				
	660		665	670
Asp Glu Asp Asn Gly Gln Thr Ser Ala Trp Tyr Val Phe Ser Ala Met				
	675		680	685
Gly Phe Tyr Pro Val Cys Pro Gly Thr Asp Gln Tyr Val Met Gly Thr				
	690		695	700
Pro Tyr Phe Lys Gln Met Lys Leu His Leu Glu Asn Gly Lys Thr Val				
705		710		720
Gln Ile Ser Ala Pro Gly Asn Ser Asp Glu Asn Arg Tyr Ile Ala Ser				
	725		730	735
Met Thr Val Asn Gly Lys Thr Leu Thr Arg Asn Tyr Leu Thr His Lys				
	740		745	750
Glu Leu Met Asn Gly Ala Lys Ile Thr Met Lys Met Ser Ser Thr Pro				
	755		760	765
Asn Lys Gln Arg Gly Val Arg Glu Ser Asp Phe Pro Tyr Ser Phe Ser				
770		775		780
Lys Glu Val Arg				
785				

<210> 5228

<211> 837

<212> PRT

<213> B.fragilis

<400> 5228

Met	Val	Lys	Thr	Ile	Lys	Lys	Glu	Ser	Glu	Val	Met	Lys	Leu	Lys	Leu
1				5					10				15		
Ser	Thr	Leu	Phe	Leu	Gly	Ala	Ala	Ala	Met	Leu	Ser	Ser	Cys	Gly	Ala
			20					25					30		
Ser	Gln	Asp	Val	Lys	Ser	Glu	Lys	Ser	Glu	Met	Arg	Ala	Pro	Ala	Tyr
		35					40					45			
Pro	Leu	Val	Met	Ile	Asp	Pro	Tyr	Thr	Ser	Ala	Trp	Ser	Phe	Thr	Asp
	50					55					60				
Asn	Leu	Tyr	Asp	Gly	Pro	Val	Lys	His	Trp	Thr	Gly	Lys	Asp	Phe	Pro
65					70					75					80
Phe	Leu	Gly	Val	Ala	Lys	Val	Asp	Gly	Gln	Ile	Tyr	Arg	Phe	Met	Gly
				85				90						95	
Thr	Glu	Glu	Leu	Glu	Leu	Leu	Pro	Leu	Val	Lys	Thr	Ser	Glu	Gln	Gly
			100					105					110		
Arg	Trp	Thr	Ala	Lys	Tyr	Thr	Thr	Lys	Lys	Pro	Ala	Asp	Gly	Trp	Gln
		115					120					125			
Asn	Ala	Asp	Phe	Asn	Asp	Ala	Ala	Trp	Lys	Glu	Gly	Glu	Gly	Ala	Phe
	130					135				140					
Gly	Thr	Met	Glu	Asn	Glu	Ser	Thr	Ala	Lys	Thr	Gln	Trp	Gly	Glu	Glu
145					150					155					160
Tyr	Ile	Trp	Ile	Arg	Arg	Lys	Ala	Asp	Ile	Lys	Asp	Asn	Leu	Gln	Gly
				165					170					175	
Lys	Asn	Val	Tyr	Leu	Glu	Tyr	Ser	His	Asp	Asp	Asp	Ala	Ile	Ile	Tyr
			180					185					190		
Val	Asn	Gly	Val	Lys	Val	Val	Asp	Thr	Gly	Asn	Ser	Ala	Lys	Lys	His
		195					200					205			
Met	Leu	Ala	Lys	Leu	Pro	Glu	Glu	Ala	Val	Ala	Ala	Leu	Lys	Gln	Gly
	210					215				220					
Glu	Asn	Leu	Ile	Ala	Ile	Tyr	Cys	Asn	Asn	Arg	Val	Ala	Asn	Gly	Leu
225					230					235					240
Ile	Asp	Cys	Gly	Leu	Leu	Val	Glu	Lys	Asp	Asn	Thr	Gln	Asn	Phe	Thr
			245						250					255	
Gln	Thr	Ala	Val	Gln	Lys	Ser	Val	Asp	Val	Gln	Ala	Met	Gln	Thr	Asn
			260					265					270		
Tyr	Glu	Phe	Thr	Cys	Gly	Pro	Val	Asp	Leu	Lys	Leu	Ala	Phe	Thr	Ser
		275					280					285			
Pro	Leu	Phe	Met	Asp	Asn	Leu	Asp	Leu	Met	Thr	Arg	Pro	Val	Ser	Tyr
	290					295					300				
Leu	Thr	Tyr	Glu	Val	Ala	Ser	Asn	Asp	Gly	Asn	Lys	His	Asn	Val	Glu
305					310					315					320
Leu	Tyr	Phe	Glu	Ala	Gly	Pro	Gln	Trp	Ala	Leu	Asp	Gln	Pro	His	Gln
			325						330					335	
Glu	Ala	Val	Ala	Glu	Ser	Phe	Thr	Glu	Gly	Asn	Leu	Leu	Tyr	Leu	Lys
			340					345					350		
Thr	Gly	Ser	Arg	Asn	Gln	Glu	Ile	Leu	Gly	Lys	Lys	Gly	Asp	Asp	Val
		355				360						365			
Arg	Ile	Asp	Trp	Gly	Tyr	Phe	Tyr	Met	Ala	Ala	Asp	Lys	Glu	Asn	Ser
	370					375					380				
Ser	Cys	Ala	Thr	Gly	Glu	Gly	Lys	Thr	Leu	Arg	Lys	Ser	Phe	Ile	Asp
385					390					395					400
Gly	Lys	Leu	Thr	Ser	Ser	Lys	Thr	Asp	Gly	Ser	Asp	Lys	Leu	Ala	Leu
			405						410					415	
Val	Arg	Ser	Leu	Gly	Glu	Thr	Lys	Lys	Ala	Glu	Gly	His	Leu	Leu	Leu
			420					425					430		
Gly	Tyr	Asp	Asp	Leu	Tyr	Ser	Ile	Gln	Tyr	Phe	Gly	Glu	Asn	Leu	Arg
		435					440					445			
Pro	Tyr	Trp	Asn	Arg	Asn	Gly	Asn	Glu	Thr	Ile	Gln	Ser	Gln	Phe	Ala
	450					455					460				

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Lys Ala Asp Lys Glu Tyr Asp Ala Val Met Asp Lys Cys Ala Ala Phe
 465 470 475 480
 Asp Ala Asn Leu Met Lys Glu Ala Thr Glu Val Gly Gly Arg Lys Tyr
 485 490 495
 Ala Glu Leu Cys Ala Leu Ala Tyr Arg Gln Ala Ile Ala Ala His Lys
 500 505 510
 Leu Val Glu Ala Pro Asn Lys Asp Leu Leu Phe Leu Ser Lys Glu Asn
 515 520 525
 Phe Ser Asn Gly Ser Ile Gly Thr Val Asp Ile Thr Tyr Pro Ser Ala
 530 535 540
 Pro Leu Phe Leu Val Tyr Asn Pro Glu Leu Ala Lys Gly Leu Met Asn
 545 550 555 560
 His Ile Phe Tyr Tyr Ser Glu Ser Gly Lys Trp Asn Lys Pro Phe Ala
 565 570 575
 Ala His Asp Val Gly Thr Tyr Pro Leu Ala Asn Gly Gln Thr Tyr Gly
 580 585 590
 Gly Asp Met Pro Ile Glu Glu Ser Gly Asn Met Leu Ile Leu Ser Ala
 595 600 605
 Ala Ile Ala Ile Val Glu Gly Asn Ala Asp Tyr Ala Gln Lys His Trp
 610 615 620
 Asp Val Leu Thr Thr Trp Thr Asp Tyr Leu Ala Gln Tyr Gly Leu Asp
 625 630 635 640
 Pro Glu Asn Gln Leu Cys Thr Asp Asp Phe Ala Gly His Phe Ala His
 645 650 655
 Asn Ala Asn Leu Ser Ile Lys Ala Ile Leu Gly Val Ala Ser Tyr Gly
 660 665 670
 Tyr Leu Ala Asp Lys Leu Gly Lys Lys Glu Val Ala Glu Lys Tyr Thr
 675 680 685
 Gln Lys Ala Lys Glu Met Ala Ala Glu Trp Val Lys Met Ala Asp Asp
 690 695 700
 Gly Asp His Tyr Arg Leu Thr Phe Asp Lys Pro Gly Thr Trp Ser Gln
 705 710 715 720
 Lys Tyr Asn Leu Val Trp Asp Lys Leu Met Asn Leu Gln Ile Phe Pro
 725 730 735
 Glu Thr Val Ala Gln Lys Glu Ile Ala Tyr Tyr Leu Gly Lys Gln Asn
 740 745 750
 Gln Tyr Gly Leu Pro Leu Asp Asn Arg Glu Thr Tyr Thr Lys Thr Asp
 755 760 765
 Trp Ile Met Trp Thr Ala Thr Leu Ala Pro Asp Lys Ala Thr Phe Glu
 770 775 780
 Lys Phe Ile Asp Pro Val Tyr Leu Phe Met Asn Glu Thr Thr Asp Arg
 785 790 795 800
 Val Pro Met Ser Asp Trp Val Phe Thr Asp Arg Pro Asn Gln Arg Gly
 805 810 815
 Phe Gln Ala Arg Ser Val Val Gly Gly Tyr Tyr Ile Lys Met Leu Glu
 820 825 830
 Lys Lys Leu Lys Lys
 835

<210> 5229

<211> 406

<212> PRT

<213> B.fragilis

<400> 5229

Phe Val Leu Leu Phe Ile Cys Leu Lys Lys Leu Ser Gly Thr Pro Cys
 1 5 10 15
 Arg Ser Val Val Asn Lys Thr Gln Asn Ser Leu Ile Met Arg Lys Leu
 20 25 30

Ala Met Trp Ala Leu Gly Ala Leu Phe Val Ala Gly Cys Ala Glu Thr
 35 40 45
 Glu Lys Ala Thr Thr Asp Ser Gly Leu Val Lys Ser Asn Phe Gln Thr
 50 55 60
 Glu Val Gly Gly Lys Lys Thr Asp Leu Tyr Val Leu Arg Asn Gln Asn
 65 70 75 80
 Asn Met Glu Val Cys Val Thr Asn Phe Gly Gly Arg Ile Val Ser Val
 85 90 95
 Met Val Pro Asp Lys Glu Gly Val Met Arg Asp Val Val Leu Gly Phe
 100 105 110
 Asp Ser Ile Gln Asp Tyr Ile Ser Lys Pro Ser Asp Phe Gly Ala Ser
 115 120 125
 Ile Gly Arg Tyr Ala Asn Arg Ile Asn Gln Gly Lys Phe Thr Leu Asp
 130 135 140
 Gly Val Glu Tyr Gln Leu Pro Arg Asn Asn Tyr Gly His Cys Leu His
 145 150 155 160
 Gly Gly Pro Lys Gly Phe Gln Tyr Gln Val Tyr Asp Ala Lys Gln Val
 165 170 175
 Gly Pro Gln Glu Leu Glu Leu Thr Tyr Leu Ser Lys Asp Gly Glu Glu
 180 185 190
 Gly Phe Pro Gly Asn Ile Thr Cys Lys Val Ile Met Lys Leu Thr Asp
 195 200 205
 Asp Asn Ala Ile Asp Ile Lys Tyr Glu Ala Glu Thr Asp Lys Pro Thr
 210 215 220
 Ile Val Asn Met Thr Asn His Ser Tyr Phe Asn Leu Asp Gly Asp Ala
 225 230 235 240
 Gly Ser Asn Ala Asp His Leu Leu Thr Ile Asp Ala Asp Ala Tyr Thr
 245 250 255
 Pro Val Asp Ser Thr Phe Met Thr Ser Gly Glu Ile Val Thr Val Glu
 260 265 270
 Gly Thr Pro Met Asp Phe Arg Thr Pro Thr Pro Val Gly Lys Arg Ile
 275 280 285
 Asn Asp Phe Asp Phe Val Gln Leu Lys Asn Gly Asn Gly Tyr Asp His
 290 295 300
 Asn Trp Val Leu Asn Ala Lys Gly Asp Ile Thr Arg Lys Ala Ala Thr
 305 310 315 320
 Leu Glu Ser Pro Lys Thr Gly Ile Val Leu Asp Val Tyr Thr Asp Glu
 325 330 335
 Pro Gly Ile Gln Val Tyr Ala Gly Asn Phe Leu Asp Gly Ser Leu Thr
 340 345 350
 Gly Lys Lys Gly Ile Thr Tyr Asn Gln Arg Ala Ser Val Cys Leu Glu
 355 360 365
 Thr Gln Lys Tyr Pro Asp Thr Pro Asn Lys Pro Glu Trp Pro Ser Ala
 370 375 380
 Val Leu Arg Pro Gly Glu Thr Tyr Asn Ser His Cys Ile Phe Lys Phe
 385 390 395 400
 Ser Val Asp Asn Gly Lys
 405

<210> 5230

<211> 1085

<212> PRT

<213> B.fragilis

<400> 5230

Arg Cys Phe Tyr Thr Leu Lys Ile Tyr Arg Thr Cys Phe Leu Asn Leu
 1 5 10 15
 Cys Thr Met Arg Lys Lys Glu Gln Met Phe Trp Leu Ala Ser Arg Ser
 20 25 30

Ala Asp Val Trp Asp Ala Asp Ser Glu Leu Ile Pro Gly Lys Tyr Pro
 980 985 990
 Leu Ile Arg Met Asn Asn Ala Glu Thr Ser Ala Tyr Glu Lys Ser Thr
 995 1000 1005
 Phe Trp Leu His Asn Val Arg Tyr Ile Lys Leu Arg Asn Leu Glu Phe
 1010 1015 1020
 Gly Tyr Thr Leu Pro Lys Ala Leu Leu Ala Lys Ser Gly Ile Ser Asn
 1025 1030 1035 1040
 Leu Arg Val Tyr Leu Ser Gly Thr Asn Leu Val Thr Leu Thr Asn Val
 1045 1050 1055
 Pro Ile Ile Asp Pro Glu Gly Ser Lys Asp Asn Gly Leu Ile Tyr Pro
 1060 1065 1070
 Thr Pro Arg Ile Ile Asn Leu Gly Ile Asn Leu Lys Phe
 1075 1080 1085

<210> 5231
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 5231
 Gly Ser Lys His Gln Tyr Ala Thr Ile Leu Leu Met Val Cys Ile Pro
 1 5 10 15
 Val Cys Tyr Val Leu Phe Cys Asn Leu Tyr Leu Val Ser Arg Thr Arg
 20 25 30
 Ala Ala Val Pro Glu Tyr Val Asp Ser Trp Ala Gln Ala Pro Gly Leu
 35 40 45
 Met Gly Pro Gly Ile Gln Asp Glu Val Lys Ile Ala Pro Phe Pro Thr
 50 55 60
 Asn
 65

<210> 5232
 <211> 724
 <212> PRT
 <213> B.fragilis

<400> 5232
 Gln His Lys His Met Ser Lys Arg Val Leu Val Leu Ile Gly Leu Phe
 1 5 10 15
 Leu Ala Cys Gly Gly Val Tyr Ser Gln Thr Ala Thr Gly Thr Lys Thr
 20 25 30
 Asn Phe Gln Thr Ala Glu Ser Trp Lys Pro Glu Thr Asp Val Arg Ala
 35 40 45
 Asp Ala Val Met Val Tyr Gly Thr Leu Asp Lys Lys Gly Val Thr Phe
 50 55 60
 Glu Gln Arg Val Gln Ser Trp Arg Asp Lys Gly Tyr Arg Ala Glu Phe
 65 70 75 80
 Met Thr Gly Val Ala Trp Gly Asp Tyr Gln Asp Tyr Phe Leu Gly Lys
 85 90 95
 Trp Asp Gly Val Lys Asp His Leu Lys Glu Gly Gln Arg Asp Arg Glu
 100 105 110
 Gly Arg Glu Ile Ala His Gly His Leu Ile Pro Tyr Ile Val Pro Thr
 115 120 125
 Glu Ser Phe Ile Arg Tyr Met Gln Glu Lys Gln Ile Lys Arg Val Ile
 130 135 140
 Asp Ala Gly Ile Thr Ser Ile Tyr Leu Glu Glu Pro Glu Phe Trp Met
 145 150 155 160
 Arg Gly Gly Tyr Ser Glu Ala Phe Lys Ser Glu Trp Gln Lys Tyr Tyr

Gly	Phe	Pro	Trp	Arg	Ala	Gln	His	Glu	Ser	Pro	Glu	Asn	Thr	Tyr	Leu
			180					185					190		
Ser	Asn	Lys	Leu	Lys	Tyr	Tyr	Leu	Tyr	Tyr	Asn	Ala	Leu	Asn	Gln	Ile
		195					200					205			
Phe	Thr	Tyr	Ala	Lys	Thr	Tyr	Gly	Lys	Ser	Lys	Gly	Leu	Asp	Val	Lys
	210					215					220				
Cys	Phe	Val	Pro	Thr	His	Ser	Leu	Val	Asn	Tyr	Thr	Ser	Trp	Gln	Ile
225					230					235					240
Val	Ser	Pro	Glu	Ala	Ser	Leu	Ala	Ser	Leu	Asp	Cys	Val	Asp	Gly	Tyr
				245					250					255	
Ile	Ala	Gln	Val	Trp	Thr	Gly	Thr	Ala	Arg	Glu	Pro	Asn	Tyr	Tyr	Asp
			260					265					270		
Gly	Val	Lys	Lys	Glu	Arg	Val	Phe	Glu	Asn	Ala	Phe	Leu	Glu	Tyr	Gly
		275					280					285			
Cys	Met	Lys	Ser	Met	Thr	Ala	Pro	Leu	Asn	Arg	Lys	Met	Tyr	Phe	Leu
	290					295					300				
Thr	Asp	Pro	Ile	Glu	Asp	Arg	Ala	Lys	Asp	Trp	Leu	Asp	Tyr	Lys	Ile
305					310					315					320
Asn	Tyr	Gln	Ala	Thr	Phe	Ala	Ala	Gln	Leu	Met	Tyr	Pro	Ala	Val	Asp
				325					330					335	
Thr	Tyr	Glu	Val	Met	Pro	Trp	Pro	Asp	Arg	Ile	Tyr	Gln	Gly	Leu	Tyr
			340					345					350		
Gln	Val	Ala	Gly	Thr	Asp	Arg	Lys	Glu	Arg	Ile	Pro	Arg	Asp	Tyr	Ser
		355					360					365			
Thr	Gln	Met	Gln	Ile	Met	Val	Asn	Thr	Leu	Asn	Asp	Ile	Arg	Thr	Ser
	370					375					380				
Glu	Thr	Gln	Val	Ser	Gly	Thr	His	Gly	Ile	Gly	Val	Leu	Met	Ala	Asn
385					390					395					400
Ser	Leu	Met	Phe	Gln	Arg	Phe	Pro	Gly	His	Asp	Gly	Tyr	Asp	Asp	Pro
				405					410					415	
Gln	Phe	Ser	Ser	Phe	Tyr	Gly	Gln	Thr	Leu	Pro	Leu	Leu	Lys	Arg	Gly
			420					425					430		
Ile	Pro	Val	Glu	Leu	Val	His	Met	Glu	Asn	Thr	Pro	Phe	Gly	Asp	Thr
		435					440					445			
Phe	Lys	Gly	Leu	Lys	Val	Leu	Val	Met	Ser	Tyr	Ser	Asn	Met	Lys	Pro
	450					455					460				
Met	Glu	Pro	Arg	Tyr	His	Asp	Phe	Leu	Ala	Asp	Trp	Val	Arg	Lys	Gly
465					470					475					480
Gly	Ala	Leu	Ile	Tyr	Cys	Gly	Glu	Asp	Ile	Asp	Pro	Tyr	Gln	Ser	Val
				485					490					495	
Leu	Glu	Trp	Trp	Asn	Ser	Asn	Gly	Asn	Gln	Tyr	Lys	Ala	Pro	Ser	Glu
			500					505					510		
His	Leu	Phe	Glu	Lys	Leu	Gly	Leu	Asp	Arg	Val	Pro	Ala	Ala	Gly	Thr
		515													

Lys Ala Lys Val Leu Cys Gly Ala Ser Arg Ile Tyr Asp Glu Lys Ala
 645 650 655
 Gly Lys Arg Ser Tyr Ser Phe Val Ala Lys Ser Pro Leu His Thr Thr
 660 665 670
 Asn Ala Ser Arg Ile Leu Leu Pro Lys Gln Pro Ile Arg Val Cys Val
 675 680 685
 Asn Gly Lys Glu Glu Pro Gln Pro Glu Lys Leu Trp Glu Glu Arg Ser
 690 695 700
 Arg Thr Leu Leu Leu Lys Phe Glu Asn Asp Pro Ala Gly Val Gln Val
 705 710 715 720
 Asp Ile Glu Trp

<210> 5233
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 5233
 His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Ser Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Ala Asn Leu Gln Lys
 20 25 30
 Ala Leu Thr Met Leu Ile Glu Lys Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Gly Val Asn Ser Leu Pro Glu Leu Glu Leu Ser Tyr Ser Ala
 50 55 60
 Gly Val Cys Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
 65 70 75 80
 Leu Lys Ile Lys Lys
 85

<210> 5234
 <211> 493
 <212> PRT
 <213> B.fragilis

<400> 5234
 Lys Pro Ile Lys Ile Met Pro Gly Lys Asn Ser Lys Lys Met Ile Gly
 1 5 10 15
 Ala Cys Val Val Thr Ala Ala Leu Leu Cys Ala Pro Ser Ala Leu Lys
 20 25 30
 Ala Glu Gly Met Leu Ser His Tyr Thr Cys Val Ala Asp Ala Ile Gln
 35 40 45
 Lys Asp Asn Arg Pro Glu Pro Ala Lys Arg Leu Phe Arg Ser Gln Ala
 50 55 60
 Val Glu Asn Glu Ile Ile Arg Val Gln Lys Leu Leu Arg Asn Ser Lys
 65 70 75 80
 Leu Ala Trp Met Phe Thr Asn Cys Phe Pro Asn Thr Leu Asp Thr Thr
 85 90 95
 Val His Phe Arg Lys Gly Lys Asp Gly Lys Pro Asp Thr Phe Val Tyr
 100 105 110
 Thr Gly Asp Ile His Ala Met Trp Leu Arg Asp Ser Gly Ala Gln Val
 115 120 125
 Trp Pro Tyr Val Gln Leu Ala Asn Ser Asp Pro Glu Leu Lys Thr Met
 130 135 140
 Leu Ala Gly Val Ile Asn Arg Gln Phe Lys Cys Ile Asn Ile Asp Pro
 145 150 155 160
 Tyr Ala Asn Ala Phe Asn Asp Gly Pro Lys Gly Gly Glu Trp Met Ser

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<210> 5235
<211> 1207
<212> PRT
<213> B.fragilis
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<400> 5235																
Ala	Asn	Met	Lys	Leu	His	Ile	Ala	Met	Leu	Ala	Ala	Thr	Leu	Leu	Leu	
1				5					10					15		
Ser	Gly	Gly	Ala	Ser	Tyr	Ala	Gln	Gly	Asn	Lys	Gln	Glu	Lys	Lys	Ala	
			20					25					30			
Lys	Ala	Tyr	Met	Val	Ala	Asp	Ala	His	Leu	Asp	Thr	Gln	Trp	Asn	Trp	
		35					40					45				
Asp	Val	Gln	Thr	Thr	Ile	Lys	Glu	Tyr	Val	Trp	Asn	Thr	Ile	Asn	Gln	
	50					55					60					
Asn	Leu	Phe	Leu	Leu	Lys	Lys	Tyr	Pro	Asn	Tyr	Val	Phe	Asn	Phe	Glu	
65					70					75					80	
Gly	Gly	Val	Lys	Tyr	Ala	Trp	Met	Lys	Glu	Tyr	Tyr	Pro	Ala	Gln	Tyr	

Pro Val Ser Ile Thr Asn Asp Val Lys Ile Thr Leu Val Glu Asp Gly
 565 570 575
 Thr Leu Arg Lys Ser Leu Cys Val Glu Lys Arg His Gly Glu Ser Val
 580 585 590
 Phe Arg Gln Tyr Ile Arg Leu Tyr Glu Gly Ser Arg Ala Glu Arg Ile
 595 600 605
 Asp Phe Tyr Asn Glu Ile Asp Trp Gln Ser Thr Asn Ala Leu Leu Lys
 610 615 620
 Ala Glu Phe Pro Leu Asn Ile Glu Asn Glu Lys Ala Thr Tyr Asp Leu
 625 630 635 640
 Gly Ile Gly Ser Ile Gln Arg Gly Asn Asn Thr Glu Thr Ala Tyr Glu
 645 650 655
 Val Tyr Ala Gln Tyr Trp Ala Asp Leu Thr Asp Arg Asp Gly Ser Tyr
 660 665 670
 Gly Val Ser Val Met Asn Asp Ser Lys Tyr Gly Trp Asp Lys Pro Asp
 675 680 685
 Asn His Thr Ile Arg Leu Thr Leu Leu His Thr Pro Glu Thr Arg Gly
 690 695 700
 Gly Tyr Ala Tyr Gln Asp His Gln Asp Leu Gly His His Thr Phe Thr
 705 710 715 720
 Tyr Ser Leu Ile Pro His Gln Gly Ala Leu Asp Lys Pro Ala Thr Val
 725 730 735
 Glu Lys Ala Glu Lys Leu Asn Gln Gln Leu Lys Ala Phe Arg Thr Glu
 740 745 750
 Lys His Lys Gly Asn Ala Gly Lys Ser Phe Ser Phe Val Ala Ser Asp
 755 760 765
 Asn Arg Asn Val Leu Ile Lys Ala Leu Lys Lys Ala Glu Glu Thr Asp
 770 775 780
 Glu Tyr Val Val Arg Val Tyr Glu Thr Glu Gly Arg Lys Ala Gln Ser
 785 790 795 800
 Ala Thr Leu Thr Phe Ala Gly Glu Ile Ile Ser Ala Ser Glu Ala Asn
 805 810 815
 Gly Thr Glu Lys Thr Ile Gly Asn Ala Thr Phe Glu Gly Asn Lys Leu
 820 825 830
 Gln Val Asn Ile Thr Pro Tyr Ser Val Arg Thr Tyr Lys Val Arg Leu
 835 840 845
 Lys Pro Ser Gly Arg Glu Thr Ser Pro Ile Glu Tyr Ala Ala Leu Pro
 850 855 860
 Leu Asp Tyr Asp Arg Lys Cys Ala Ser Tyr Asn Glu Phe Arg Gly Glu
 865 870 875 880
 Gly Asp Phe Glu Ser Gly Tyr Ser Phe Ala Ala Glu Leu Leu Pro Asp
 885 890 895
 Ser Leu Ile Ala Gly Gln Ile Thr Phe Arg Leu Gly Glu Lys Glu Ile
 900 905 910
 Ala Asn Gly Met Thr Cys Glu Gly Asp Thr Leu Gln Leu Pro Ala Gly
 915 920 925
 Asn Lys Tyr Asn Arg Leu Tyr Ile Leu Ala Ala Ser Thr Glu Gly Asp
 930 935 940
 Asn Gln Ala Asp Phe Arg Ile Gly Lys Gln Thr Ala Ser Phe Val Val
 945 950 955 960
 Pro Ser Tyr Thr Gly Phe Ile Gly Gln Trp Gly His Lys Gly His Thr
 965 970 975
 Glu Gly Tyr Leu Lys Asp Ala Glu Ile Ala Tyr Val Gly Thr His Arg
 980 985 990
 His Ala Ser Asn Gly Asp Gln Pro Tyr Glu Phe Thr Tyr Met Phe Lys
 995 1000 1005
 Phe Gly Met Asp Ile Pro Lys Gly Ala Thr Ser Val Ile Leu Pro Arg
 1010 1015 1020
 Asn Glu Lys Val Val Leu Phe Ala Ala Thr Leu Val Ala Glu Asn Glu

225		230		235		240									
Ser	Glu	Lys	Ala	Thr	Asp	Tyr	Tyr	Lys	Lys	Ala	Leu	Ala	Ala	Ala	Glu
		245							250					255	
Glu	Val	Ile	Asn	Ser	Gly	Lys	Tyr	Ser	Leu	Met	Arg	Val	Ala	Asp	Asp
		260							265					270	
Ala	Thr	Pro	Gln	Glu	Lys	Ala	Asp	Asn	Phe	Phe	Lys	Ala	Val	Cys	Glu
		275							280					285	
Lys	Asn	Gly	Asn	Thr	Glu	Val	Ile	Trp	Ser	Arg	Asp	Tyr	Ile	Tyr	Pro
		290							295					300	
Gly	Gln	Thr	His	Gly	Tyr	Thr	Lys	Ser	Val	Gln	Pro	His	Asp	Gly	Ala
305					310					315					320
Glu	Asp	Gly	Gly	Asn	Ser	Arg	Leu	Ser	Ala	Leu	Leu	Asn	Leu	Val	Glu
				325					330					335	
Ala	Phe	Glu	Pro	Ile	Ala	Thr	Asp	Thr	Pro	Gly	Glu	Gly	Ala	Lys	Phe
			340						345					350	
Asp	Val	Gly	Thr	Lys	Asp	Asn	Pro	Lys	Phe	Tyr	Thr	Asn	Pro	Glu	Asp
		355							360					365	
Leu	Phe	Val	Gly	Arg	Asp	Pro	Arg	Leu	Ala	Gly	Thr	Ile	Leu	Tyr	Pro
		370							375					380	
Gly	Ser	Ser	Phe	Arg	Asp	Arg	Thr	Val	Val	Leu	Gln	Thr	Gly	Gln	Trp
385					390					395					400
Ile	Lys	Asn	Ser	Asp	Gly	Gln	Trp	Glu	Gln	Lys	Leu	Gly	Gln	Ser	Leu
				405						410					415
Gly	Glu	Lys	Asp	Asp	Gln	Gly	Arg	Tyr	Val	Thr	Ala	Leu	Asn	Gly	Pro
			420						425					430	
Met	Val	Arg	Asn	Asp	Gln	Arg	Glu	Cys	Asn	Arg	Thr	Gly	Phe	Tyr	Val
		435							440					445	
Arg	Lys	Tyr	Leu	Asp	Lys	Thr	Thr	Ser	Ala	Gly	Thr	Asp	Arg	Gly	Ser
		450												460	
Glu	Met	Trp	Asn	Val	Tyr	Phe	Arg	Leu	Ser	Glu	Ala	Tyr	Leu	Ile	Ala
465					470					475					480
Ala	Glu	Ala	Ala	Tyr	Glu	Leu	Asn	Gly	Gly	Ser	Asp	Ala	Thr	Ala	Leu
				485						490					495
Lys	Tyr	Ile	Asn	Ala	Val	Arg	Ser	Arg	Ala	Gly	Val	Lys	Glu	Leu	Ala
			500						505					510	
Ser	Val	Asn	His	Gln	Gln	Ile	Met	His	Glu	Asn	Gln	Val	Glu	Phe	Ala
		515							520					525	
Phe	Glu	Gly	His	Arg	Trp	Trp	Asp	Leu	Lys	Arg	Trp	Arg	Gln	Ala	Asp
		530							535					540	
Lys	Ile	Trp	Thr	Gly	Ser	Glu	Met	Asp	Ile	Thr	Ala	Thr	Arg	Arg	Gly
545					550					555					560
Leu	Trp	Pro	Phe	Leu	Val	Val	Ser	Asp	Asp	Asp	Lys	Asn	Gly	Lys	Trp
				565						570					575
Val	Phe	Phe	Glu	Glu	Asn	Met	Asn	Arg	Tyr	Tyr	Arg	Asn	Pro	Leu	Lys
			580						585					590	
Cys	Leu	Pro	Lys	His	Tyr	Tyr	Ala	Glu	Leu	Asp	Asn	Gly	Trp	Leu	Asn
		595					600					605			
Asn	Asn	Pro	Lys	Leu	Val	Lys	Asn	Pro	Tyr	Gln					
		610					615								

<210> 5237

<211> 427

<212> PRT

<213> B.fragilis

<400> 5237

Gly	Pro	Ala	Asp	Leu	Leu	Leu	Tyr	Pro	Tyr	Ala	Ser	Phe	Tyr	Ile	Leu
1				5					10					15	
Phe	Leu	Ile	His	Ile	Met	Thr	His	Thr	Gln	Thr	Ile	Thr	Pro	Lys	Lys


```

1           5           10           15
Ser Cys Ser Leu Gly Leu Ile Leu Leu Gly Ala Phe Thr Leu Leu Ser
20           25           30
Val Pro Val Tyr Gly Gln Gln Ile Gln Gln Ser Glu Arg Gln Val Gln
35           40           45
Gln Val Pro Phe Leu Gln Phe Asn Phe Asp Glu Gln Gly Gly Glu Thr
50           55           60
Ala Arg Asn Ser Gly Arg Gly Gly Ser Lys Tyr Asp Ala Arg Ile Thr
65           70           75           80
Gly Gly Thr Val Glu Trp Gly Pro Gly Leu Gln Gln Gly Ser Ala Arg
85           90           95
Leu Ser Asn Lys Gly His Phe Lys Ser Pro Asp Gly Val Leu Ala His
100          105          110
Val Lys Asp Phe Thr Leu Ser Val Trp Val Tyr Leu Asn Glu Gln Ser
115          120          125
Asp Asn Gln Thr Val Cys Leu His His Gly Ser Trp Lys Ile Gly Ile
130          135          140
Val Asn Pro Ala Cys Phe Ser Ala Pro Ile Asp Leu Gly Tyr
145          150          155

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<210> 5239

<211> 336

<212> PRT

<213> B.fragilis

<400> 5239

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Ile Arg Gly Leu Phe Leu Ile Tyr Ile Phe Ser Met Lys Lys Leu Leu
1           5           10           15
Phe Ser Leu Phe Thr Val Phe Ser Phe Cys Val Pro Ser Ile Ala Gln
20           25           30
Gln Tyr Ser Asn Pro Val Ile Asn Tyr Ser Leu Pro Asp Pro Thr Val
35           40           45
Ile Lys Ala Asp Asp Gly Tyr Tyr Tyr Leu Tyr Ala Thr Glu Asn Ile
50           55           60
Arg Asn Leu Pro Ile His Arg Ser Lys Asp Met Val Asn Trp Ser Phe
65           70           75           80
Val Gly Thr Ala Phe Thr Asn Glu Thr Arg Pro Thr Phe Glu Pro Lys
85           90           95
Gly Asn Leu Trp Ala Pro Asp Ile Asn Lys Ile Gly Asp Arg Tyr Val
100          105          110
Met Tyr Tyr Ser Met Ser Val Trp Gly Gly Glu Trp Thr Cys Gly Ile
115          120          125
Gly Val Ala Thr Ala Asp Lys Pro Glu Gly Ser Phe Thr Asp His Gly
130          135          140
Lys Leu Phe Arg Ser Asn Glu Ile Gly Ile Gln Asn Cys Ile Asp Pro
145          150          155          160
Phe Tyr Ile Glu Asp Gly Gly Lys Lys Tyr Leu Phe Trp Gly Ser Phe
165          170          175
His Gly Ile Tyr Gly Ala Glu Leu Ser Asp Asp Gly Leu Ser Leu Lys
180          185          190
Glu Gly Met Lys Pro Gln Gln Val Ala Gly Thr Ala Tyr Glu Gly Thr
195          200          205
Tyr Ile His Lys Arg Gly Gly Tyr Tyr Tyr Leu Phe Ala Ser Ile Gly
210          215          220
Arg Cys Cys Glu Gly Leu Lys Ser Thr Tyr Thr Val Val Gly Arg
225          230          235          240
Ser Lys Tyr Leu Phe Gly Pro Tyr Val Asp Lys Lys Gly Glu Ser Met
245          250          255
Leu Glu Asn His His Glu Val Leu Ile Asp Lys Asn Glu Ala Phe Val

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<210> 5240
<211> 147
<212> PRT
<213> B.fragilis
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<210> 5241
<211> 161
<212> PRT
<213> B.fragilis
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<400> 5241																
Gly	Lys	Asn	Met	Lys	Asn	Lys	Val	Leu	Ile	Ile	Val	Ala	Ile	Leu	Leu	
1				5					10					15		
Leu	Leu	Pro	Asn	Ala	Met	Ala	Trp	Ala	His	Gln	Pro	Ala	Asp	Gly	Asn	
			20					25					30			
Leu	Lys	His	Phe	Thr	Lys	Lys	Asp	Ala	Thr	Thr	Ala	Met	Asp	Ala	Phe	
		35					40					45				
His	Ser	Thr	Phe	Tyr	Asn	Pro	Asp	Met	Lys	Leu	Tyr	Ala	Ile	Ser	Ser	
	50				55						60					
Asp	Met	Lys	Gly	Arg	Ala	Ala	Ile	Trp	Val	Gln	Ala	Ile	Tyr	Trp	Asp	
65				70					75					80		
Met	Ile	Met	Asn	Ala	Tyr	Lys	Arg	Thr	Lys	Ala	Pro	Lys	Tyr	Arg	Arg	
			85					90					95			
Leu	Ile	Glu	Glu	Val	Tyr	Gln	Gly	Gly	Tyr	Glu	Gln	Tyr	Asp	Lys	Tyr	
		100					105					110				
Asn	Trp	Asp	Asn	Lys	Ile	Glu	Trp	Phe	Ile	Tyr	Asp	Asp	Met	Met	Trp	
		115				120					125					

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Trp Ile Ile Ser Leu Ala Arg Ala Tyr Glu Ile Thr Asn Asp Pro Lys
  130          135          140
Tyr Leu Ala His Ala Ser Ser Gly Phe Tyr Pro Cys Leu Glu Arg Val
  145          150          155          160
Val

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<210> 5242
<211> 240
<212> PRT
<213> B.fragilis

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<400> 5242
Lys Glu Ile Met Lys Ala Ile Ser Lys Ile Phe Ser Ala Leu Leu Leu
  1          5          10          15
Val Met Ile Val Val Thr Ser Cys Thr Lys Asp Asn Tyr Asp Ala Pro
  20          25          30
Glu Ser Met Leu Thr Gly Lys Val Val Tyr Glu Gly Glu Ala Leu Gln
  35          40          45
Leu Arg Gly Asn Glu Ala Val Arg Leu Phe Leu Tyr Gln Arg Gly Tyr
  50          55          60
Glu Lys His Asp Pro Ile Glu Val Phe Val Asn Gln Asp Gly Ala Tyr
  65          70          75          80
Ser Ala Cys Leu Phe Asp Gly Glu Tyr Gln Leu Ile Thr Lys Ser Gly
  85          90          95
Asn Gly Pro Trp Ser Glu Glu Gly Arg Asp Thr Ile Asn Val Ile Val
  100          105          110
Ser Gly Asn Thr Val Gln Asn Val Glu Val Val Pro Tyr Tyr Met Val
  115          120          125
Arg Asn Ala Glu Met Lys Leu Asn Gly Asn Val Val Thr Ala Ser Phe
  130          135          140
Asn Val Glu Lys Ile Ala Gly Lys Glu Ile Asp Arg Val Phe Phe Met
  145          150          155          160
Leu Gly Thr Thr Gln Tyr Ile Asn Asp Gly Glu His Asn Val Asp Arg
  165          170          175
Phe Asp Asp Ala Asp Gly Ala Lys Met Ala Glu Ile Asn Val Thr Gly
  180          185          190
Ala Arg Tyr Glu Phe Thr Pro Arg Asp Tyr Thr Asp Asn Lys Met Phe
  195          200          205
Gln Thr Ala Leu Lys Arg Gly Thr Leu Phe Gly Arg Ile Cys Ile Trp
  210          215          220
Pro Lys Gly Ser Asp Gln Gly Ile Tyr Ser Glu Val Ile Arg Leu Lys
  225          230          235          240

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<210> 5243
<211> 142
<212> PRT
<213> B.fragilis

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<400> 5243
Leu Leu Ile Leu Tyr Ile Met Asn Lys Arg Phe Ile Ile Val Leu Leu
  1          5          10          15
Ala Phe Val Phe Val Ser Met Ala Asn Ala Lys Ala Asp Ile Pro Lys
  20          25          30
Val Trp Glu Val Asn Gly Val Tyr Thr Leu Val Glu Val Glu Ser Pro
  35          40          45
Ser Gly Tyr Gly Leu Ile Lys Ser Ile Thr Ile Gly Asn Glu Tyr Ala
  50          55          60
Tyr Asn Ser Thr Glu Ile Lys Ile Val Val Ile Asp Gly Val Asn Ser

```


65		70		75		80									
Val	Arg	Ile	Asp	Trp	Val	Ala	Glu	Gly	Asn	Arg	Tyr	Pro	Val	Thr	Tyr
			85						90					95	
Ser	Val	Gly	Tyr	Asp	Asn	Thr	Val	Ile	Ile	Pro	Asn	Phe	Leu	Arg	Arg
			100					105					110		
Arg	Phe	Ile	Val	Ser	Val	Glu	Tyr	Thr	Phe	Ala	Gly	Ser	Met	Ala	Gly
		115					120					125			
Ile	Gln	Tyr	Ala	Tyr	Glu	Thr	Arg	Val	Phe	Glu	Ile	Arg	Ser		
	130					135					140				

<210> 5244

<211> 420

<212> PRT

<213> B.fragilis

<400> 5244

Glu	Ile	Pro	Pro	Phe	Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Gly
1				5				10						15	
Leu	Met	Leu	Phe	Thr	Arg	Asn	Gly	Leu	Thr	Leu	Gly	Lys	Arg	Cys	Thr
			20				25					30			
Ser	Phe	Phe	Gly	Tyr	Gln	Phe	Arg	Arg	Ile	Val	Arg	Ser	Leu	Met	Ser
		35				40					45				
Val	Tyr	Phe	Cys	Gly	Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu
	50				55					60					
Met	Arg	His	Leu	Ser	Tyr	His	Pro	Thr	Phe	Arg	Thr	Cys	Ser	Ser	Asp
65					70				75						80
Thr	Ile	Leu	Arg	Ala	Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr
				85				90					95		
Thr	Ser	Asp	Gln	Gly	Lys	Thr	Tyr	Asp	Phe	Asn	Thr	Ala	Asp	Lys	Leu
			100				105					110			
Asn	Thr	Leu	Leu	Ile	Asn	Ala	Leu	Val	Ser	Thr	Gly	Glu	Leu	Lys	Glu
		115				120					125				
Ile	Glu	Glu	Tyr	Asp	Val	Asp	Phe	Asp	His	Gln	Phe	Leu	Glu	Thr	Glu
	130				135				140						
Lys	Tyr	Asp	Ala	Lys	Pro	Thr	Tyr	Lys	Lys	Phe	Leu	Gly	Tyr	Arg	Pro
145				150					155						160
Gly	Val	Tyr	Val	Ile	Gly	Asp	Lys	Ile	Val	Tyr	Ile	Glu	Asn	Ser	Asp
			165					170					175		
Gly	Asn	Thr	Asn	Val	Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe
			180				185					190			
Phe	Ala	Leu	Leu	Glu	Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala
		195				200					205				
Asp	Cys	Gly	Ser	Cys	Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His
	210					215					220				
Cys	Lys	His	Phe	Tyr	Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn
225				230					235						240
Asp	Ile	Phe	Ala	Leu	Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile
			245				250						255		
Gln	Phe	Glu	Leu	Asn	Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys
		260				265						270			
Tyr	Arg	Leu	Val	Ile	Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp
	275					280						285			
Leu	Trp	Glu	Gly	Glu	Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr
	290					295					300				
Lys	Ser	Ser	Thr	Arg	Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly
305				310					315						320
Lys	Glu	Arg	Ile	Phe	Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg
			325					330					335		
Leu	Pro	Lys	Ser	Phe	Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Leu	Thr

Ala	Leu	Ile	His	Asn	Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr
			355				360					365			
Lys	Ala	Phe	Gly	Leu	Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe
			370				375				380				
Arg	Phe	Ile	Ser	Val	Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr
385					390					395					400
Val	Leu	Asn	Ile	Tyr	Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys
				405					410					415	
Thr	Glu	Phe	Gly												
			420												

<210> 5245

<211> 857

<212> PRT

<213> B.fragilis

<400> 5245

Arg	Leu	Lys	Glu	Ser	Arg	Phe	Thr	Gly	Gln	Arg	Phe	Arg	Glu	Ala	Gln
1				5					10					15	
Glu	Arg	Asp	Tyr	Arg	His	Tyr	Asp	Arg	Phe	Val	Glu	Lys	Ile	Ile	Pro
			20					25					30		
Asp	Ser	Val	Asn	Phe	Tyr	Arg	Thr	Tyr	Val	Asn	Tyr	His	Ser	Phe	Glu
			35				40					45			
Arg	Tyr	Leu	Glu	Arg	Leu	Lys	Trp	Tyr	Lys	Arg	Gly	Leu	Glu	Lys	Arg
			50			55					60				
Trp	Ala	Ile	Gln	Asp	Ala	Arg	Lys	Arg	Arg	Pro	Asp	Pro	Leu	Leu	Leu
65				70					75						80
Arg	Phe	Asp	Met	Phe	Asn	Arg	Gln	Val	Gly	Arg	Arg	Asp	Ser	Leu	Met
				85					90					95	
Lys	Ser	Arg	Met	Leu	Asp	Asn	Ser	Gln	Arg	Met	Ile	Thr	Arg	Gln	Trp
			100					105					110		
Trp	Arg	Tyr	Gly	Arg	Ala	Trp	Glu	Arg	Met	Asn	Asp	Thr	Leu	Gln	Phe
			115				120					125			
Gln	Ser	Arg	His	Leu	Leu	Glu	Arg	Phe	Arg	Phe	Phe	Asn	Asn	Lys	Trp
			130			135					140				
Ala	Asp	Asn	Ala	Ala	Phe	Gln	Ser	Asp	Gly	Leu	Ile	Ala	Arg	Lys	Asn
145				150						155					160
Tyr	Phe	Arg	Asp	Lys	Ala	Leu	Ser	Thr	Pro	Met	Trp	Gln	Ala	Lys	Arg
				165					170					175	
Ala	Leu	Tyr	Lys	Ala	Asp	Pro	Asp	Ala	Ala	Ile	Arg	Ile	Tyr	Ala	Ser
			180					185					190		
Arg	Phe	Gly	Tyr	Phe	Asn	Asp	Lys	Met	Glu	Arg	Leu	Asp	Ala	Thr	Leu
			195				200					205			
Tyr	Arg	Tyr	Tyr	Arg	Thr	Lys	Gly	Ala	Arg	Ala	Glu	Ser	Arg	Glu	Gly
			210			215					220				
Val	Arg	Phe	Leu	Arg	Ala	Phe	Met	Val	Gly	Arg	Asp	Thr	Thr	Leu	Ser
225				230						235					240
Tyr	Leu	Asn	Arg	Asn	Gln	Leu	Thr	Glu	Lys	Tyr	Ile	Arg	Arg	Tyr	Glu
				245					250					255	
Lys	Val	Lys	Asn	Phe	Phe	Pro	Met	Phe	His	Phe	Arg	Arg	Pro	Asp	Pro
			260					265					270		
Asp	Thr	Leu	Ser	Pro	Leu	Trp	Glu	Thr	Arg	Thr	Arg	Ile	Asp	Thr	Met
			275				280					285			
Gln	Thr	Arg	His	Thr	Leu	Leu	Ser	Lys	Leu	Ser	Lys	Glu	Asp	Ile	Tyr
			290			295					300				
Glu	Tyr	Tyr	Val	Arg	Gln	Gln	Gln	Gly	Val	Ser	Asp	Arg	Gly	Met	Ile
305				310						315					320
Gly	Pro	Phe	Arg	Gly	Leu	Leu	Pro	Leu	Tyr	Thr	Tyr	His	Arg	Asp	Leu

				325						330					335				
Pro	Asp	Ser	Ile	Val	Leu	Arg	Val	Pro	Gly	Arg	Lys	Thr	Arg	Arg	Asp				
				340					345						350				
Phe	Glu	Leu	Ser	Arg	Phe	Asp	Ser	Ala	Thr	Thr	Val	Asn	Arg	Tyr	Ile				
			355				360							365					
Gly	Arg	Tyr	Glu	Phe	Leu	Arg	Ser	Thr	Tyr	Pro	Gln	Tyr	His	Leu	Ile				
			370				375						380						
Arg	Lys	Leu	Tyr	Asn	Ile	His	Pro	Pro	Ala	Leu	Arg	His	Ala	Ala	Arg				
385					390						395				400				
Gln	Ala	Ser	Tyr	Glu	Glu	Arg	Leu	Ala	Arg	Ile	Asn	Ser	Leu	Asp	Ser				
				405					410					415					
Thr	Ser	Leu	Ile	Lys	Met	Phe	Tyr	Asn	Thr	Gln	Lys	Ile	Ala	Arg	Asn				
			420						425					430					
Glu	Ala	Arg	Lys	Ala	Met	Lys	Asp	Thr	Lys	Tyr	Arg	Asp	Ile	Val	Arg				
			435				440						445						
Phe	Pro	Phe	Asn	Pro	Glu	Ala	Gln	Leu	Asp	Thr	Val	Ile	Tyr	Ala	Thr				
			450				455						460						
Asp	Gln	Val	His	Phe	Leu	Tyr	Ser	Gln	Lys	Val	Pro	Ala	Asp	Glu	Asn				
465					470						475				480				
Ser	Ala	Arg	Met	Lys	Val	Tyr	Val	Val	Gly	Asp	Val	Leu	Asn	Ser	Asn				
				485					490					495					
Gly	Ser	Arg	Phe	Ser	Leu	Pro	Tyr	Ser	Asp	Thr	Leu	Thr	Tyr	Leu	Val				
			500						505					510					
Ser	Ser	Met	Thr	Lys	Phe	Val	Asp	Arg	Thr	Pro	Arg	Phe	Val	Arg	Lys				
			515				520						525						
Ile	Val	Thr	Arg	Asp	Ala	Glu	Ala	Asn	Ala	Ser	Val	Asn	Phe	Tyr	Phe				
			530				535						540						
Pro	Lys	Asn	Ser	Phe	Arg	Met	Asp	Glu	Thr	Ile	Asp	Ile	Asn	Arg	Gln				
545					550						555				560				
Gly	Val	Lys	Gln	Val	His	Asn	Leu	Thr	Leu	Ala	Leu	Met	Thr	Asp	Pro				
				565					570					575					
Val	Tyr	Ile	Ile	Asp	Ser	Leu	Thr	Leu	Leu	Ala	Thr	Ser	Ser	Pro	Glu				
			580						585					590					
Gly	Asn	Trp	His	Val	Asn	Gly	Glu	Ile	Ser	Arg	Lys	Arg	Ala	Glu	Ser				
			595				600						605						
Ile	Arg	Asn	Ile	Leu	Val	Glu	Asp	Phe	Lys	Leu	Leu	Tyr	Asp	Ser	Leu				
			610				615						620						
Ala	Ile	Gly	Ala	Ala	Ile	Glu	Met	Asp	Glu	Thr	Gly	Asn	Ile	Ile	Arg				
625					630						635				640				
Gln	Glu	Met	Lys	Asp	Gly	Ile	Pro	Asn	Leu	Pro	Glu	Leu	Ile	Lys	Ile				
				645					650					655					
Arg	Thr	Val	Pro	Glu	Gly	Trp	Glu	Lys	Leu	Arg	Arg	Leu	Ile	Val	Asn				
			660						665					670					
Asp	Lys	Asn	Phe	Gln	Gly	Asn	Lys	Gly	Ala	Ile	Leu	Arg	Ile	Ile	Asp				
			675				680						685						
Arg	Glu	Gln	Glu	Pro	Asp	Arg	Arg	Glu	Trp	Leu	Ile	Lys	Ser	Gln	Tyr				
			690				695						700						
Lys	Thr	Glu	Tyr	Ala	Tyr	Met	Leu	Asp	Lys	Leu	Tyr	Pro	Ala	Val	Arg				
705					710						715				720				
Arg	Val	Asp	Phe	Leu	Phe	Ser	Leu	Ser	Arg	Arg	Gly	Met	Arg	Gln	Asp				
			725						730					735					
Thr	Leu	Tyr	Thr	Asn	Glu	Pro	Asp	Thr	Met	Tyr	Ala	Arg	Ala	Val	Asp				
			740						745					750					
Tyr	Leu	Glu	Lys	Arg	Lys	Tyr	Glu	Gln	Ala	Leu	Glu	Ile	Leu	Arg	Pro				
			755				760						765						
Tyr	Glu	Asp	Val	Asn	Thr	Ala	Ile	Ala	Tyr	Met	Ser	Leu	Gly	Tyr	Asp				
			770				775					780							
Lys	Ala	Ala	Leu	Arg	Ile	Leu	Glu	Gln	Ser	Ser	Gln	Thr	Ala	Glu	Thr				
785					790					795					800				

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Gln Tyr Met Gln Ala Ile Leu Asn Ala Arg Leu Gly Asn Glu Gln Arg
 805 810 815
 Ala Val Ser Leu Leu Ser Ala Ala Glu Val Asp Asp Arg Ile Arg
 820 825 830
 Phe Arg Ala Asn Leu Asp Pro Glu Leu Ser Leu Leu Val Lys Lys Tyr
 835 840 845
 Gly Leu Phe Lys Glu Asp Asp Leu Trp
 850 855

<210> 5246

<211> 295

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (295)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5246

Ala Ile Glu Arg Val Tyr Phe Gln Pro Arg Gly Glu Asp Leu Leu Lys
 1 5 10 15
 Asn Asp Ala Leu Leu Pro Leu Asn Lys Glu Lys Ile Lys Ser Val Ala
 20 25 30
 Val Val Gly Pro Phe Ala Asp Tyr Asn Tyr Leu Gly Gly Tyr Ser Gly
 35 40 45
 Gln Pro Pro Tyr Ser Val Ser Leu Leu Lys Gly Val Lys Glu Leu Ile
 50 55 60
 Gly Lys Lys Gly Lys Val Thr Tyr Leu Asn Gly Met Gly Thr Ser Ala
 65 70 75 80
 Asp Ser Ile Ala Gln Val Val Lys Gly Ala Asp Ile Val Leu Val Ala
 85 90 95
 Leu Gly Ser Asp Glu Lys Met Ala Arg Glu Asn His Asp Met Pro Ser
 100 105 110
 Ile Tyr Leu Pro Glu Gly Gln Glu Lys Leu Leu Lys Glu Ile Tyr Gln
 115 120 125
 Val Asn Pro Arg Ile Val Leu Val Phe His Thr Gly Asn Pro Leu Thr
 130 135 140
 Ser Glu Trp Ala Asp Thr His Ile Pro Ala Ile Met Gln Ala Trp Tyr
 145 150 155 160
 Pro Gly Gln Glu Ala Gly Arg Ala Leu Ala Asn Leu Leu Phe Gly Asn
 165 170 175
 Glu Asn Pro Ser Gly Lys Leu Pro Met Thr Ile Tyr Arg Thr Glu Glu
 180 185 190
 Gln Leu Pro Asp Ile Leu Asp Phe Asp Met Trp Lys Gly Arg Thr Tyr
 195 200 205
 Arg Tyr Met Lys Gly Glu Pro Leu Tyr Gly Phe Gly His Gly Leu Ser
 210 215 220
 Tyr Thr Ser Phe Glu Phe Asp Asn Ile Gln Gly Asn Asp Thr Leu Gln
 225 230 235 240
 Pro Asp Ala Ile Leu Gln Cys Ser Val Glu Leu Ser Asn Ser Gly Gln
 245 250 255
 Leu Ala Gly Glu Glu Val Val Gln Val Tyr Val Ser Arg Glu Asn Thr
 260 265 270
 Pro Val Tyr Thr Tyr Pro Leu Lys Lys Leu Val Ala Phe Lys Lys Val
 275 280 285
 Lys Leu Ala Phe Ser Glu Xaa
 290 295

<210> 5247
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 5247

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Lys Leu Leu Gln Cys Arg Lys Arg Lys Glu Ala Leu Met Thr Ser Leu
1           5           10           15
Tyr Asp Phe Ser Val Leu Asn Gln Asn Asn Gln Ala Thr Pro Leu Asp
           20           25           30
Ser Tyr Arg Gly Lys Val Leu Leu Ile Val Asn Thr Ala Thr Gly Cys
           35           40           45
Gly Leu Thr Pro Gln Tyr Gln Gly Leu Gln Glu Leu Tyr Glu Arg Tyr
           50           55           60
Gln Asp Gln Gly Phe Glu Ile Leu Asp Phe Pro Cys Asn Gln Phe Met
65           70           75           80
Gly Gln Ala Pro Gly Ser Ala Glu Glu Ile Asn Ala Phe Cys Ser Leu
           85           90           95
His Phe Gln Thr Thr Phe Pro Arg Phe Ala Lys Ile Lys Val Asn Gly
          100          105          110
Lys Glu Ala Asp Pro Leu Tyr Val Trp Leu Lys Asp His Lys Ser Gly
          115          120          125
Pro Leu Gly Lys Arg Ile Glu Trp Asn Phe Ala Lys Phe Leu Ile Ser
          130          135          140
Arg Asp Gly Gln Val Phe Glu Arg Phe Ser Ser Lys Thr Asp Pro Lys
145          150          155          160
Gln Ile Glu Glu Ala Ile Gln Thr Leu Leu
          165          170

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<210> 5248
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 5248

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Lys Glu Glu Asn Lys Leu Lys Ile Phe Lys Gly Glu Phe Tyr Arg Ile
1           5           10           15
Ser Val Leu Thr Asp Lys Leu Val Arg Leu Glu Tyr Ser Gln Thr Gly
           20           25           30
Ser Phe Glu Asp Arg Thr Thr Gln Leu Ile Tyr Asn Arg Asp Phe Gly
           35           40           45
Gln Val Ser Leu Asp Tyr Ile Glu Thr Ser Asn Val Leu Asp Ile Met
           50           55           60
Thr Asp Tyr Phe His Leu His Phe Asn Lys Gly Glu Phe Asn Ala Glu
65           70           75           80
Asn Leu Phe Ile Glu Leu Lys Gly Asn Phe Ala
          85           90

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<210> 5249
 <211> 294
 <212> PRT
 <213> B.fragilis

<400> 5249

```

Arg His Ala Arg Thr Tyr Met Met Arg Asn Asp Trp Gln Asn Met Tyr
1           5           10           15
Thr Ala Ala Thr Asp Val Met Asn Ser Gly Gln Tyr Asn Leu Asn Thr
           20           25           30
Pro Tyr Asp Val Ile Phe Thr Asp Glu Gly Glu Asn Ser Ser Glu Ser

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35	40	45
Val Phe Glu Leu Gln Cys Ala Ser Thr Ala Ala Leu Pro Ala Ser Asp		
50	55	60
Lys Ile Gly Ser Gln Phe Cys Glu Val Gln Gly Val Arg Gly Ser Gly		
65	70	75
Gln Trp Asp Leu Gly Trp Gly Trp His Met Gly Thr Glu Leu Met Gly		
85	90	95
Glu Ala Phe Glu Pro Gly Asp Pro Arg Lys Asp Ala Thr Leu Leu Tyr		
100	105	110
Phe Arg Arg Ser Asp Thr Asp Pro Ile Thr Pro Glu Asn Thr Asn Lys		
115	120	125
Pro Tyr Gly Glu Ser Pro Val Ser Gln Ala Asp Gly Thr Tyr Phe Asn		
130	135	140
Lys Lys Ala Tyr Thr Asn Pro Ala Leu Arg Glu Glu Phe Thr Arg His		
145	150	155
Gly Phe Trp Val Asn Ile Arg Ile Ile Arg Tyr Gly Asp Val Val Leu		
165	170	175
Met Ala Ala Glu Ser Ala Asn Glu Leu Gly Lys Thr Gly Glu Ala Ser		
180	185	190
Asn Tyr Leu Glu Met Val Arg Ala Arg Ala Arg Gly Asn Asn Pro Asp		
195	200	205
Ile Leu Pro Lys Val Thr Ser Leu Asp Gln Thr Val Leu Arg Asp Ala		
210	215	220
Ile Arg His Glu Arg Arg Val Glu Leu Gly Leu Glu Ser Gly Arg Phe		
225	230	235
Tyr Asp Leu Val Arg Trp Gly Ile Ala Ser Gln Val Leu His Ala Ala		
245	250	255
Gly Lys Thr Gly Tyr Gln Pro Lys Asn Ala Leu Leu Pro Leu Ser Gln		
260	265	270
Asp Glu Ile Asp Lys Ser Lys Ser Val Leu Val Gln Asn Pro Asp Tyr		
275	280	285
Leu Glu His Thr Thr Glu		
290		

<210> 5250

<211> 493

<212> PRT

<213> B.fragilis

<400> 5250

Ser Thr Asn Thr Phe Met Asn Gln Lys Leu Leu Phe Ser Ser Ala Leu	
1	5
Leu Val Gly Ile Ala Gly Thr Gln Gln Ala Leu Ala Gln Lys Lys Lys	
20	25
Val Gln Asp Gln Lys Arg Pro Asn Val Val Phe Ile Leu Ala Asp Asp	
35	40
Leu Gly Phe Gly Asp Leu Ser Cys Tyr Gly Gln Glu Lys Phe Glu Thr	
50	55
Pro Asn Ile Asp Lys Leu Ala Gln Glu Gly Met Arg Phe Thr Gln Cys	
65	70
Tyr Ser Gly Thr Thr Val Ser Ala Pro Ser Arg Ser Cys Leu Leu Thr	
85	90
Gly Thr His Ser Gly His Thr Ala Ile Arg Gly Asn Val Glu Leu Asp	
100	105
Pro Glu Gly Gln Phe Pro Leu Pro Ala Asp Ala Gln Thr Ile Phe His	
115	120
Asp Phe Gln Asn Ala Gly Tyr Lys Thr Gly Ala Phe Gly Lys Trp Gly	
130	135
Leu Gly Phe Ile Gly Ser Thr Gly Asp Pro Lys Lys His Gly Ile Asp	
140	

145 150 155 160
 Glu Phe Tyr Gly Tyr Asn Cys Gln Leu Leu Ala His Ser Tyr Tyr Pro
 165 170 175
 Asp His Leu Trp Asp Asn Asp Lys Arg Val Glu Leu Lys Asp Asn Thr
 180 185 190
 Leu Asp Val Gln Tyr Gly Lys Gly Thr Tyr Ser Gln Asp Leu Ile His
 195 200 205
 Ser Lys Ala Leu Asp Phe Leu Asp Arg Met Gly Lys Ser Gly Glu Ser
 210 215 220
 Phe Cys Met Trp Tyr Pro Thr Ile Ile Pro His Ala Glu Leu Ile Val
 225 230 235 240
 Pro Glu Asp Ser Ile Ile Lys Lys Phe Arg Gly Lys Tyr Pro Glu Lys
 245 250 255
 Pro Phe His Gly Thr Glu Pro Gly Asn Pro Ala Phe Arg Lys Gly Gly
 260 265 270
 Tyr Cys Ser Gln Phe Tyr Pro His Ala Thr Phe Ala Ala Met Val Tyr
 275 280 285
 Arg Leu Asp Val Tyr Val Gly Gln Ile Val Gln Lys Leu Lys Glu Met
 290 295 300
 Gly Val Tyr Asp Asn Thr Ile Ile Ile Phe Ala Ser Asp Asn Gly Pro
 305 310 315 320
 His Met Glu Gly Gly Ala Asp Pro Asp Phe Phe Asn Ser Asn Gly Ile
 325 330 335
 Trp Arg Gly Tyr Lys Arg Asp Leu Tyr Glu Gly Gly Ile Arg Val Pro
 340 345 350
 Met Ile Ile Ser Trp Pro Gly Arg Val Gln Pro Ser Thr Gln Thr Asp
 355 360 365
 Phe Met Cys Ser Phe Trp Asp Val Met Pro Thr Phe Arg Glu Ile Leu
 370 375 380
 Asn Pro Lys Ala Lys Asn Gln Gln Met Asp Gly Val Ser Leu Leu Pro
 385 390 395 400
 Leu Leu Glu Asn Arg Lys Gly Gln Lys Glu His Glu Tyr Leu Tyr Phe
 405 410 415
 Glu Phe Gln Glu Met Asn Gly Arg Gln Ala Val Arg Lys Gly Pro Trp
 420 425 430
 Lys Leu Val His Met Asn Val Arg Gly Lys Asn Pro Tyr Tyr Glu Leu
 435 440 445
 Tyr Asn Leu Asn Ser Asp Pro Ser Glu Arg His Asn Val Leu Asn Gln
 450 455 460
 Tyr Pro Glu Lys Val Thr Glu Leu Lys Ala Ile Met Gln Ser Ser His
 465 470 475 480
 Ile Pro Asn Pro Asn Phe Pro Leu Leu Pro Gly Glu Lys
 485 490

<210> 5251

<211> 550

<212> PRT

<213> B.fragilis

<400> 5251

Thr Met Asn Lys Lys Leu Leu Ser Arg Leu Ala Pro Gly Leu Phe Ala
 1 5 10 15
 Val Val Leu Phe Thr Ala Cys Arg Pro Ala Ala Thr Val Lys Gly Asn
 20 25 30
 Leu Asp Val Ile Pro Gln Pro Gln Glu Ile Val Leu Ala Arg Asp Thr
 35 40 45
 Thr Pro Phe Ile Ile Asp Arg Ser Thr Thr Ile Val Tyr Pro Ala Thr
 50 55 60
 Asn Glu Lys Met His Arg Thr Ala Asp Phe Leu Ala Thr Phe Ile Lys

65					70				75				80			
Glu	Met	Thr	Gly	Thr	Glu	Val	Arg	Val	Ser	Asp	Lys	Glu	Lys	Ser	Ser	
				85					90					95		
Asn	Ala	Ile	Ile	Leu	Ala	Val	Asp	Ser	Thr	Met	Gly	His	Pro	Glu	Gly	
			100					105					110			
Tyr	Lys	Leu	Gln	Ile	Thr	Pro	Glu	Lys	Val	Leu	Leu	Thr	Gly	Gly	Ser	
			115					120					125			
Glu	Ala	Gly	Val	Phe	Tyr	Gly	Ile	Gln	Thr	Ile	His	Lys	Ala	Leu	Pro	
							135					140				
Ile	Leu	Lys	Asp	Gly	Lys	Val	Ala	Ala	Ala	Leu	Pro	Ala	Gly	Thr	Val	
145					150					155					160	
Thr	Asp	Phe	Pro	Arg	Phe	Arg	Tyr	Arg	Gly	Phe	Met	Ile	Asp	Val	Gly	
				165					170				175			
Arg	His	Phe	Phe	Pro	Val	Ser	Tyr	Leu	Lys	Gln	Met	Ile	Asp	Leu	Met	
			180						185				190			
Ala	Leu	His	Asn	Ile	Asn	Tyr	Phe	His	Trp	His	Leu	Thr	Glu	Asp	Gln	
			195				200					205				
Gly	Trp	Arg	Ile	Glu	Ile	Lys	Lys	Tyr	Pro	Lys	Leu	Thr	Glu	Ile	Gly	
							215					220				
Ser	Lys	Arg	Asp	Ser	Thr	Ile	Ile	Asp	Trp	Glu	Thr	Lys	Lys	Phe	Asp	
225					230					235					240	
Gly	Lys	Pro	His	Ser	Gly	Phe	Tyr	Thr	Gln	Asp	Glu	Ala	Arg	Glu	Ile	
				245						250				255		
Val	Arg	Tyr	Ala	Ala	Asp	Arg	Phe	Ile	Thr	Val	Val	Pro	Glu	Ile	Asp	
			260					265					270			
Leu	Pro	Gly	His	Thr	Thr	Ala	Ala	Leu	Ala	Ser	Tyr	Pro	Glu	Leu	Gly	
			275				280					285				
Cys	Thr	Gly	Gly	Pro	Tyr	Lys	Val	Leu	Cys	Ser	Phe	Gly	Val	Phe	Pro	
						295				300						
Asp	Val	Leu	Cys	Ala	Gly	Asn	Asp	Gln	Thr	Leu	Gln	Phe	Thr	Lys	Asp	
305					310					315					320	
Val	Leu	Asp	Glu	Ile	Met	Asp	Ile	Phe	Pro	Ser	Glu	Tyr	Ile	His	Ile	
				325					330					335		
Gly	Gly	Asp	Glu	Cys	Pro	Lys	Ser	Arg	Trp	Glu	Lys	Cys	Pro	Lys	Cys	
			340					345					350			
Gln	Ala	Lys	Ile	Lys	Glu	Leu	Gly	Ile	Lys	Ala	Leu	Pro	Lys	His	Ser	
			355				360					365				
Lys	Glu	Asn	Gln	Leu	Gln	Thr	Tyr	Phe	Met	Ser	Glu	Leu	Glu	Lys	Glu	
						375					380					
Ile	Asn	Ala	His	Gly	Arg	Arg	Met	Leu	Gly	Trp	Asp	Glu	Val	Leu	Glu	
385					390					395					400	
Gly	Gly	Leu	Thr	Pro	Asn	Ser	Thr	Ile	Met	Ser	Trp	Arg	Gly	Ile	Gln	
				405					410					415		
Gly	Gly	Ile	Glu	Ala	Ala	Arg	Gln	His	His	Asp	Val	Ile	Met	Thr	Pro	
			420					425					430			
Ile																

Thr Leu Lys Thr His Lys
545 550

<210> 5252

<211> 980

<212> PRT

<213> B.fragilis

<400> 5252

Arg	Asp	Arg	Lys	Thr	Ser	Met	Lys	Asn	Asn	Pro	Tyr	Thr	Gly	Phe	Leu
1				5					10					15	
Thr	Trp	Leu	Thr	Val	Leu	Phe	Thr	Val	Cys	Cys	Leu	Pro	Leu	Lys	Ala
			20					25					30		
Ser	His	Tyr	Tyr	Tyr	Lys	Gln	Ile	Ser	Leu	Lys	Glu	Gly	Leu	Pro	Ser
		35				40						45			
Thr	Val	Arg	Cys	Val	Tyr	Thr	Glu	Pro	Lys	Gly	Phe	Val	Trp	Ile	Gly
	50					55					60				
Thr	Asn	Ala	Gly	Leu	Gly	Arg	Phe	Asp	Gly	Gln	Lys	Leu	Arg	Lys	Tyr
65					70					75					80
Val	His	Arg	Gln	Glu	Asp	Val	His	Ser	Leu	Pro	His	Asn	Tyr	Ile	His
				85					90					95	
Gln	Ile	Thr	Glu	Asp	Ile	Gln	His	Asn	Ile	Trp	Ile	Leu	Thr	Asp	Gly
			100					105					110		
Gly	Ile	Ala	Gln	Tyr	Arg	Arg	Ser	Ser	Asp	Asp	Phe	Ala	Ile	Pro	Leu
		115					120					125			
Asp	Asp	Arg	Gly	His	Pro	Ile	Leu	Ala	Tyr	Ser	Ala	Cys	Leu	Thr	Glu
	130					135					140				
Gln	Gly	Val	Ile	Phe	Gly	Gly	Arg	Asn	Arg	Ile	Tyr	Arg	Tyr	Asp	Tyr
145					150					155					160
Asp	Ser	Arg	Ser	Ile	Lys	Leu	Leu	Leu	Asp	Phe	Ser	Ser	Asp	Pro	Tyr
				165					170					175	
Phe	Ala	Ile	Ser	Ala	Ile	Ser	Arg	Trp	Asp	Glu	Glu	Thr	Leu	Leu	Cys
			180					185					190		
Cys	Ser	Arg	Trp	Gln	Gly	Leu	Arg	Leu	Ile	Asn	Leu	Arg	Ser	Gly	Glu
		195					200					205			
Arg	Arg	Leu	Pro	Pro	Phe	Asp	Cys	Gly	Lys	Glu	Ile	Met	Ala	Leu	Leu
	210					215						220			
Ile	Asp	Ser	His	Asn	Arg	Ile	Trp	Leu	Ala	Pro	Tyr	Asn	Glu	Gly	Leu
225					230					235					240
Arg	Cys	Phe	Asn	Pro	Glu	Gly	Arg	Leu	Leu	Ala	Ser	Tyr	Thr	Thr	Asp
			245						250					255	
Asn	Ser	Gly	Leu	Ser	Asn	Asn	Val	Val	Leu	Ser	Met	Ala	Glu	Arg	Asp
		260						265					270		
Ser	His	Ile	Trp	Val	Gly	Thr	Asp	Gly	Gly	Gly	Ile	Asn	Ile	Ile	His
	275						280					285			
Pro	Asp	Ser	His	Arg	Ile	Thr	Val	Leu	Glu	His	Ile	Pro	Gly	Asp	Asn
	290					295						300			
Tyr	Ser	Leu	Pro	Val	Asn	Ser	Ile	Leu	Ser	Leu	Tyr	Asn	Asp	Asn	Tyr
305					310					315					320
Asn	Asn	Met	Trp	Ala	Gly	Ser	Ile	Arg	Lys	Gly	Leu	Ile	Asn	Ile	Arg
				325					330					335	
Glu	Val	Ser	Met	Lys	Thr	Tyr	Thr	Asp	Val	Phe	Pro	Gly	Ser	Thr	Gln
			340					345					350		
Gly	Leu	Ser	Asp	Pro	Thr	Val	Leu	Ser	Leu	Tyr	Gln	Asp	Glu	Pro	Asn
		355					360					365			
Gly	Arg	Ile	Trp	Ile	Gly	Thr	Asp	Gly	Gly	Gly	Val	Asn	Ser	Leu	Asp
	370					375					380				
Pro	Val	Thr	Glu	Glu	Phe	Arg	His	Asp	Arg	Ser	Thr	Trp	Gly	Asp	Lys
385					390					395					400

Val	Val	Ser	Ile	Thr	Gly	Phe	Thr	Arg	Glu	Ser	Ile	Leu	Leu	Ser	Val
				405					410					415	
Phe	Ser	Arg	Gly	Leu	Phe	Val	Tyr	Asn	Lys	Glu	Asn	Gly	Lys	Arg	Lys
			420					425					430		
Pro	Leu	Pro	Ile	Asp	His	Pro	Asp	Leu	Lys	Gln	Tyr	Ile	Tyr	Tyr	Ser
			435				440					445			
Gly	Met	Ala	Val	Asn	Ile	Tyr	Gln	Asp	Glu	Pro	Gly	Ser	Val	Leu	Leu
	450					455					460				
Leu	Ala	Gly	His	Thr	Tyr	Arg	Tyr	Asp	Ile	Gly	Ser	Gln	Lys	Ile	Arg
465				470						475					480
Val	Val	Asn	Glu	Glu	Glu	Gly	Met	Glu	Ile	Ala	Gly	Ser	Met	Asn	Ala
				485					490					495	
Ile	Ala	His	Asn	Glu	Arg	Phe	Thr	Tyr	Leu	His	Asp	Ser	Arg	Thr	Leu
			500					505					510		
Tyr	Glu	Leu	Asp	Arg	Thr	Gly	Asn	Arg	Leu	Lys	Lys	Leu	Phe	Ser	Cys
		515					520					525			
Thr	Gly	Asp	Thr	Leu	Leu	Tyr	Ser	Val	Ser	Met	Asp	Glu	Lys	Gly	Asp
	530					535					540				
Phe	Trp	Ile	Gly	Ser	Asn	Thr	Gly	Leu	Gly	Gln	Tyr	Ser	Ile	Arg	Thr
545				550						555					560
Arg	Gln	Tyr	His	Pro	Leu	Ile	Thr	Ser	Leu	Phe	Gly	Glu	Ala	Ser	Ser
				565					570					575	
Val	Ile	Cys	Asp	His	Arg	Gly	Lys	Val	Trp	Ile	Gly	Ala	Asp	His	Met
			580					585					590		
Leu	Phe	Ala	Trp	Met	Leu	Gln	Ser	Arg	Lys	Phe	Ile	Leu	Phe	Gly	Glu
		595					600					605			
Ser	Asp	Gly	Val	Ile	Pro	Asn	Glu	Tyr	Leu	Ala	Lys	Pro	Arg	Leu	Val
	610					615					620				
Ser	Gly	Lys	Gly	Glu	Val	Tyr	Met	Gly	Gly	Val	Asn	Gly	Leu	Leu	Cys
625				630						635					640
Ile	Asp	Asn	Arg	Phe	Pro	Ala	Thr	Ser	Ser	Asn	Tyr	Pro	Glu	Val	Val
				645					650					655	
Leu	Thr	Asp	Val	Arg	Val	Asn	Gly	Glu	Pro	Ala	Thr	Asn	Arg	Thr	Ala
			660					665					670		
Gly	Asn	Pro	Asp	Lys	Leu	Thr	Leu	Pro	Gln	Asp	Ser	Arg	Ala	Ile	Thr
		675					680					685			
Leu	Arg	Val	Met	Ser	His	Glu	Glu	Asp	Ile	Phe	Arg	Lys	Lys	Arg	Tyr
	690					695					700				
Arg	Tyr	Arg	Ile	Asp	Gly	Leu	Asn	Glu	Glu	Pro	Ile	Glu	Ser	Tyr	Asp
705				710						715					720
Pro	Glu	Leu	Val	Ile	Arg	Ser	Leu	Pro	Ala	Gly	Asn	Tyr	Arg	Ile	Gln
				725					730					735	
Ala	Ala	Cys	Ser	Thr	Gln	Asn	Gly	Asp	Trp	Thr	Pro	Phe	His	Pro	Ile
			740					745					750		
Leu	Ser	Leu	Thr												

2099

865				870					875				880		
Thr	Asp	His	Leu	Asp	Ser	Pro	Glu	Leu	Asp	Val	Thr	Phe	Leu	Cys	Thr
				885					890				895		
Glu	Met	Gly	Leu	Ser	Arg	Ala	Ser	Leu	Tyr	Asn	Lys	Leu	Lys	Ala	Met
			900					905				910			
Thr	Asn	Met	Gly	Ala	Asn	Asp	Tyr	Ile	Asn	Lys	Phe	Arg	Met	Glu	Lys
		915					920				925				
Ala	Ile	Gln	Leu	Ile	Ser	Thr	Thr	Asp	Leu	Thr	Phe	Thr	Glu	Ile	Ala
	930					935				940					
Glu	Lys	Ile	Gly	Phe	Thr	Thr	Ser	Arg	Tyr	Phe	Ser	Thr	Ser	Phe	Lys
945				950				955							960
Gln	Tyr	Thr	Gly	Glu	Thr	Pro	Thr	Gln	Tyr	Lys	Glu	Lys	Ile	Arg	Lys
			965					970					975		
Ser	Ser	Lys	Val												
			980												

<210> 5253

<211> 786

<212> PRT

<213> B.fragilis

<400> 5253

Phe	Leu	Asn	Glu	Gln	His	Met	Arg	Lys	Leu	Phe	Phe	Pro	Leu	Leu	Leu
1				5				10				15			
Phe	Val	Ser	Gly	Leu	Leu	Ser	Ala	Gln	Thr	Glu	Ile	Thr	Leu	Tyr	Val
			20					25				30			
Ser	Pro	Ser	Gly	Ser	Asp	His	His	Pro	Gly	Thr	Ala	Glu	Lys	Pro	Met
			35			40				45					
Ala	Thr	Leu	Glu	Tyr	Ala	Trp	Lys	Lys	Ala	Ser	Arg	Gln	Ala	Gly	Arg
			50			55				60					
Arg	Ser	Ile	Thr	Ile	Tyr	Cys	Glu	Gly	Thr	Asn	Tyr	Leu	Ser	Ala	Pro
65				70				75				80			
Ile	Leu	Ile	Thr	Asn	Glu	Thr	Ser	Gly	Thr	Pro	Glu	His	Pro	Ile	Arg
			85			90				95					
Phe	Ser	Ser	Tyr	Pro	Gly	Gln	Lys	Ala	Val	Ile	Ser	Gly	Ser	Arg	Ile
			100			105				110					
Leu	Arg	Asn	Leu	Arg	Trp	Lys	Glu	Tyr	Lys	Asn	Gly	Ile	Met	Gln	Ala
			115			120				125					
Lys	Val	Glu	Glu	Glu	Leu	Ile	Pro	Asp	Gln	Leu	Phe	Val	Asn	Gly	Lys
			130			135			140						
Lys	Gln	Ile	Ser	Ala	Arg	Tyr	Pro	Asn	Phe	Asp	Pro	Asp	Ile	Arg	Ile
145				150				155							160
Phe	Asn	Gly	Tyr	Ala	Ala	Asp	Ala	Cys	Ser	Pro	Glu	Arg	Val	Lys	Asn
			165			170				175					
Trp	Ser	Asn	Pro	Ala	Gly	Gly	Tyr	Leu	His	Ala	Met	His	Ser	Arg	Glu
			180			185				190					
Trp	Gly	Gly	Tyr	Gln	Tyr	Ser	Ile	Glu	Gly	Lys	Asp	Ala	Lys	Gly	Glu
			195			200				205					
Leu	Ile	Leu	Lys	Gly	Gly	Phe	Gln	Asn	Asn	Arg	Gln	Met	Gly	Met	His
			210			215			220						
His	Thr	Tyr	His	Met	Val	Glu	Asn	Ile	Phe	Glu	Glu	Leu	Asp	Ala	Glu
225				230				235							240
Gly	Glu	Trp	Tyr	Phe	Asp	Lys	Glu	Thr	His	Thr	Leu	Tyr	Phe	Tyr	Pro
			245			250				255					
Pro	Arg	Glu	Leu	Asp	Leu	Gln	Thr	Ala	Leu	Phe	Glu	Val	Pro	Gln	Ala
			260			265				270					
Glu	Asn	Leu	Phe	Ile	Leu	Lys	Gly	Lys	Thr	Gly	Ser	Pro	Val	Arg	His
			275			280			285						
Val	Ser	Val	Asp	His	Leu	Glu	Leu	Thr	Gln	Thr	Leu	Arg	Thr	Phe	Met

290	295	300
Lys Thr Asn Glu Pro	Leu Leu Arg Ser Asp Trp	Lys Ile Tyr Arg Gly
305	310	315
Gly Ala Leu Ile Ile	Glu Asn Ala Glu Lys Cys Ser Val	Asn Gly Cys
325	330	335
Tyr Leu His Asp Ile	Gly Gly Asn Ala Ile Phe Phe Ser	Asn Tyr Asn
340	345	350
Arg Asn His Arg Val	Ser Gln Asn His Ile Thr Arg	Ile Gly Ala Ser
355	360	365
Ala Val Cys Phe Val	Gly Ser Pro Asp Ala Val Arg	Ser Pro Leu Phe
370	375	380
Glu Tyr Gly Lys Ser	Gln Thr Trp Glu Gln Met Asp	Lys Gly Thr Gly
385	390	395
Pro Leu Thr Pro Asp	Tyr Pro Ser Asp Cys Leu Val	Asp Asp Asn Leu
405	410	415
Ile His Ser Ile Gly	Glu Thr Glu Lys Gln Gly Ala Gly	Ile Gln Leu
420	425	430
Ser Met Ser Ala Arg	Ile Thr Ile Arg Asn Asn Ser	Ile Tyr Asp Leu
435	440	445
Pro Arg Ala Gly Ile	Asn Val Ser Glu Gly Thr Trp	Gly Gly His Leu
450	455	460
Ile Glu Gly Asn Asp	Val Phe Asp Thr Val Leu Glu Thr	Gly Asp His
465	470	475
Gly Ser Phe Asn Ser	Trp Gly Arg Asp Arg Tyr Trp	His Pro Asp Arg
485	490	495
Asn Val Met Asp Glu	Phe Ala Lys Glu His Pro Gln	Met Val Phe Arg
500	505	510
Asp Ala Thr Glu Thr	Thr Val Ile Arg Asn Asn Arg	Trp Arg Cys Asp
515	520	525
His Gly Trp Asp Ile	Asp Leu Asp Asp Gly Ser Ser	Asn Tyr His Ile
530	535	540
Tyr Asn Asn Leu Cys	Leu His Gly Gly Leu Lys Leu	Arg Glu Gly Phe
545	550	555
Ala Arg Thr Val Glu	Asn Asn Ile Met Val Asn Asn	Thr Phe His Pro
565	570	575
His Val Trp Phe Ala	Asn Ser Gln Asp Ile Phe Arg	His Asn Ile Val
580	585	590
Thr Thr Pro Tyr Arg	Pro Ile Gln Val Lys Glu Trp	Gly Lys Glu Thr
595	600	605
Asp Thr Asn Phe Phe	Val Thr Lys Gln Gly Leu Glu	Gln Ala Gln Lys
610	615	620
Arg Gly Thr Asp Leu	His Ser Leu Tyr Gly Asp	Pro Leu Phe Ile Ala
625	630	635
Pro Glu Lys Gly Asp	Tyr Arg Val Lys Glu Asn Ser	Pro Ala Leu Lys
645	650	655
Thr Gly Phe Arg Asn	Phe Asp Met Glu His Phe Gly	Val Gln Cys Pro
660	665	670
His Leu Lys Ala Leu	Ala Ala Thr Pro Lys Leu Pro	Val Phe Lys Ile
675	680	685
Pro Glu Glu Lys Pro	Glu Thr Val Gln Thr Tyr Ser	Trp Lys Gly Leu
690	695	700
Thr Leu Lys Glu Val	Ser Thr Glu Gly Glu Arg Ser	Ala Thr Gly Leu
705	710	715
Asp Lys Ile Arg Gly	Ile Leu Val Val Gln Val Glu	Lys Gly Ile Thr
725	730	735
Ala Leu Gln Ala Asn	Asp Val Ile Leu Arg Ile Asn	Gly Lys Pro Val
740	745	750
Asp Asn Arg Thr Asp	Met Glu Thr Glu Ile Arg Lys	Ser Pro Glu Gly
755	760	765

2101

Asn Lys Phe Arg Ile Ile Phe Phe Arg Asn Gln Lys Glu Asn Ala Val
 770 775 780
 Thr Met
 785

<210> 5254

<211> 535

<212> PRT

<213> B.fragilis

<400> 5254

Ser Leu Ile Glu Lys Leu Leu Met Met Asn Asn Leu Pro Ser Gly Ile
 1 5 10 15
 Leu Tyr Ser Leu Thr Gly Ala Ala Ala Val Ala Ser Leu Thr Ser Cys
 20 25 30
 Ala Thr Gly Lys Gln Lys Glu Glu Gln Lys Pro Leu Asn Ile Val Tyr
 35 40 45
 Ile Met Thr Asp Asp His Thr Ala Gln Met Met Ser Cys Tyr Asp Thr
 50 55 60
 Arg Tyr Ile Glu Thr Pro Asn Leu Asp Arg Ile Ala Arg Asp Gly Val
 65 70 75 80
 Arg Phe Thr Asn Ser Phe Val Ala Asn Ser Leu Ser Gly Pro Ser Arg
 85 90 95
 Ala Cys Met Ile Thr Gly Lys His Ser Cys Ala Asn Lys Phe Tyr Asp
 100 105 110
 Asn Thr Thr Cys Val Phe Asp Ser Ala Gln Gln Thr Phe Pro Lys Leu
 115 120 125
 Leu Gln Lys Ala Gly Tyr Gln Thr Ala Leu Val Gly Lys Trp His Leu
 130 135 140
 Glu Ser Leu Pro Ser Gly Phe Asn Tyr Trp Glu Ile Val Pro Gly Gln
 145 150 155 160
 Gly Asp Tyr Tyr Asn Pro Asp Phe Ile Thr Gln Asp Asn Asp Thr Val
 165 170 175
 Gln Lys His Gly Tyr Ile Thr Asn Leu Ile Thr Asp Asp Ala Ile Asp
 180 185 190
 Trp Met Glu Asn Lys Arg Asp Glu Ser Lys Pro Phe Cys Leu Leu Ile
 195 200 205
 His His Lys Ala Ile His Arg Asn Trp Met Ala Asp Thr Cys Asn Leu
 210 215 220
 Ala Leu Tyr Glu Asp Lys Thr Phe Pro Leu Pro Asp Asn Phe Phe Asp
 225 230 235 240
 Asp Tyr Glu Gly Arg Pro Ala Ala Ala Ala Gln Glu Met Ser Ile Val
 245 250 255
 Lys Asp Met Asp Met Ile Tyr Asp Leu Lys Met Leu Arg Pro Asp Lys
 260 265 270
 Asp Ser Arg Leu Lys Ser Leu Tyr Gln Lys Phe Leu Gly Arg Met Asp
 275 280 285
 Glu Gly Gln Arg Ala Ala Trp Asp Lys Phe Tyr Gly Pro Val Ile Asp
 290 295 300
 Asp Phe Tyr Lys Gln Asn Leu Ser Gly Lys Glu Leu Ala Asp Trp Lys
 305 310 315 320
 Phe Gln Arg Tyr Met Arg Asp Tyr Met Lys Thr Val Lys Ser Leu Asp
 325 330 335
 Asp Asn Val Gly Arg Val Leu Asp Tyr Leu Glu Lys Lys Gly Leu Leu
 340 345 350
 Asp Asn Thr Leu Val Val Tyr Thr Ser Asp Gln Gly Phe Tyr Met Gly
 355 360 365
 Glu His Gly Trp Phe Asp Lys Arg Phe Met Tyr Glu Glu Ser Met Arg
 370 375 380

2101 5254 535 PRT B.fragilis

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Thr Pro Leu Ile Met Arg Met Pro Lys Gly Phe Asp Arg Arg Gly Asp
385          390          395          400
Ile Thr Glu Met Val Gln Asn Ile Asp Tyr Ala Pro Thr Phe Leu Glu
          405          410          415
Leu Ala Gly Ala Pro Val Pro Ala Asp Ile Gln Gly Met Ser Leu Leu
          420          425          430
Pro Leu Leu Lys Gly Glu Gln Pro Lys Asp Trp Arg Asn Ala Leu Tyr
          435          440          445
Tyr His Phe Tyr Glu Tyr Pro Ala Glu His Met Val Lys Arg His Tyr
          450          455          460
Gly Ile Arg Thr Glu Arg Tyr Lys Leu Ile His Phe Tyr Asn Asp Ile
465          470          475          480
Asn Trp Trp Glu Leu Tyr Asp Met Gln Ala Asp Pro Thr Glu Met His
          485          490          495
Asn Leu Tyr Gly Gln Lys Glu Tyr Glu Pro Val Val Lys Glu Leu Lys
          500          505          510
Glu Gln Met Leu Lys Leu Gln Glu Gln Tyr Asn Asp Pro Val Arg Phe
          515          520          525
Ser Pro Glu Arg Asp Lys Glu
          530          535

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<210> 5255

<211> 60

<212> PRT

<213> B.fragilis

<400> 5255

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Ser Cys Ser Leu Ser Thr Lys Asn Val Val Leu Leu Cys Val Thr Leu
1          5          10          15
Tyr Tyr Ser Val Leu Leu Cys Gly Glu Lys Ala Phe Gly Glu Leu Leu
          20          25          30
Phe Met Ser Leu Gln Gly Ile Arg Arg Glu Tyr Ile Phe Pro Ile Thr
          35          40          45
Ile Ile Gln Arg Arg Ile Asn Leu Gln His Leu Gly
          50          55          60

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<210> 5256

<211> 509

<212> PRT

<213> B.fragilis

<400> 5256

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Lys Lys Lys Leu Ile Met Lys Arg Ile Glu Ile Tyr Ile Gly Leu Ser
1          5          10          15
Val Phe Ala Leu Ser Ala Lys Ser Gln Val Lys Glu Ser Arg Pro Asn
          20          25          30
Val Ile Tyr Ile Ile Met Asp Asp Leu Gly Tyr Gly Asp Ile Gly Cys
          35          40          45
Tyr Gly Ser Glu Lys Ile Glu Thr Pro Asn Ile Asp Arg Leu Tyr Lys
          50          55          60
Asp Gly Ile Ser Phe Thr Gln His Tyr Thr Gly Ser Pro Val Ser Ala
65          70          75          80
Pro Ala Arg Cys Val Leu Met Thr Gly Met His Ser Gly His Ala Gln
          85          90          95
Ile Arg Ala Asn Asp Glu Met Ala Tyr Arg Gly Ala Ile Met Asn Tyr
          100          105          110
Asp Ser Met Tyr Val His Pro Gly Leu Glu Gly Gln Tyr Pro Leu Lys
          115          120          125
Ala His Thr Met Thr Leu Gly Arg Met Met Gln Gln Ala Gly Tyr Val

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130		135		140
Thr Gly Cys Phe Gly Lys Trp Gly Leu Gly Ala Pro Gly Thr Glu Gly				
145		150		155
Thr Pro Asn Lys Gln Gly Phe Asp Ser Phe Tyr Gly Tyr Asn Cys Gln				
	165		170	175
Arg Gln Ala His Ser Tyr Tyr Pro Ala Phe Leu Tyr Lys Asn Glu Asp				
	180		185	190
Arg Val Tyr Leu Ala Asn Lys Val Leu Asp Pro His Thr Thr Lys Leu				
	195		200	205
Asp Ala Gly Ala Asp Pro Arg Asp Glu Ala Ala Tyr Ala Lys Phe Ser				
	210		215	220
Gln Lys Glu Tyr Ala Asn Asp Leu Ile Phe Asp Glu Leu Ile Ser Phe				
225		230		235
Val Gly Gln Asn Arg Lys Lys Pro Phe Phe Leu Met Trp Thr Thr Pro				
	245		250	255
Leu Pro His Val Ser Leu Gln Ala Pro Glu Lys Trp Val Lys Tyr Tyr				
	260		265	270
Val Gly Lys Phe Gly Asp Glu Ala Pro Tyr Ile Gly Lys Ala Gly Tyr				
	275		280	285
Met Pro Cys Arg Tyr Pro His Ala Thr Tyr Ala Ala Met Ile Ser Tyr				
	290		295	300
Phe Asp Glu Gln Ile Gly Lys Leu Ile Glu Lys Leu Lys Lys Glu Arg				
305		310		315
Leu Tyr Asp Asn Thr Val Ile Met Phe Thr Ser Asp Asn Gly Pro Thr				
	325		330	335
Phe Asn Gly Gly Ser Asp Ser Pro Trp Phe Asp Ser Gly Gly Pro Phe				
	340		345	350
Arg Ser Glu Tyr Gly Trp Gly Lys Cys Phe Val His Glu Gly Gly Ile				
	355		360	365
Arg Ile Pro Ala Ile Val Thr Trp Pro Gly Lys Ile Lys Pro Ser Thr				
	370		375	380
Gln Ser Asp His Ile Cys Gly Phe Gln Asp Val Met Pro Thr Leu Ala				
385		390		395
Asp Ile Val Asn Ile Ala Cys Pro Glu Thr Asp Gly Ile Ser Phe Leu				
	405		410	415
Pro Ala Leu Leu Gly Glu Thr Glu Arg Gln Lys Glu His Glu Tyr Leu				
	420		425	430
Tyr Trp Glu Tyr Pro Asp Pro Thr Ile Gly Leu Lys Ala Ile Arg Met				
	435		440	445
Gly Lys Trp Lys Gly Ile Val Asn Asn Ile Arg Lys Gly Asn Ser Thr				
	450		455	460
Met Glu Leu Tyr Asp Leu Glu Ser Asp Leu Arg Glu Glu His Asp Val				
465		470		475
Ala Ala Glu His Pro Asp Ile Val Arg Lys Leu Thr Arg Leu Met Glu				
	485		490	495
Lys Ser His Thr Glu Pro Glu Asn Pro Lys Phe Arg Phe				
	500		505	

<210> 5257

<211> 423

<212> PRT

<213> B.fragilis

<400> 5257

Val His Gly Leu Phe Gln Pro Arg Gly Glu Asp Asp Ala Gly Phe			
1	5	10	15
Ile Tyr Ala Ile Gln Ser Leu Arg Gln Trp Asn Thr Gly Glu Glu Arg			
	20	25	30
Gly Leu Ile Phe Pro Cys Val Glu Ile Thr Asp Phe Pro Arg Val Lys			

<210> 5259
 <211> 370
 <212> PRT
 <213> B.fragilis

<400> 5259

Glu	Lys	Ile	Ile	Ser	Val	Glu	Leu	Cys	Val	Ile	Cys	Gly	Glu	Leu	Lys
1				5					10					15	
Thr	Ile	Thr	Ile	Met	Asn	Lys	Ile	Ile	Glu	Leu	Leu	Gly	Asn	Gln	Ala
			20					25					30		
Glu	Tyr	Tyr	Leu	Asn	His	Thr	Cys	Lys	Thr	Ile	Asp	Lys	Ser	Leu	Ile
		35					40					45			
His	Val	Pro	Ser	Pro	Asp	Thr	Ile	Asp	Lys	Ile	Trp	Ile	Asp	Ser	Asp
	50					55					60				
Arg	Asn	Ile	Gln	Thr	Leu	Arg	Ser	Leu	Gln	Thr	Leu	Leu	Gly	His	Gly
65					70					75				80	
Arg	Leu	Ala	Asn	Thr	Gly	Tyr	Val	Ser	Ile	Leu	Pro	Val	Asp	Gln	Asp
			85					90						95	
Ile	Glu	His	Thr	Ala	Gly	Ala	Ser	Phe	Ala	Pro	Asn	Pro	Ile	Tyr	Phe
			100					105					110		
Asp	Pro	Glu	Asn	Ile	Val	Lys	Leu	Ala	Ile	Glu	Gly	Gly	Cys	Asn	Ala
		115					120					125			
Val	Ala	Ser	Thr	Phe	Gly	Asn	Leu	Gly	Ala	Val	Ala	Arg	Lys	Tyr	Ala
	130					135					140				
His	Lys	Ile	Pro	Phe	Val	Val	Lys	Leu	Asn	His	Asn	Glu	Leu	Leu	Ser
145					150					155				160	
Tyr	Pro	Asn	Thr	Tyr	Asp	Gln	Val	Leu	Phe	Gly	Thr	Val	Lys	Glu	Ala
			165						170					175	
Trp	Glu	Met	Gly	Ala	Val	Ala	Val	Gly	Ala	Thr	Ile	Tyr	Phe	Gly	Ser
			180					185					190		
Glu	Gln	Ser	Arg	Arg	Gln	Leu	Val	Glu	Ile	Ala	Glu	Ala	Phe	Asp	Tyr
		195					200					205			
Ala	His	Glu	Leu	Gly	Met	Ala	Thr	Ile	Leu	Trp	Cys	Tyr	Leu	Arg	Asn
	210					215					220				
Asn	Glu	Phe	Lys	Lys	Asp	Gly	Ile	Asp	Tyr	His	Ala	Ala	Ala	Asp	Leu
225					230					235				240	
Thr	Gly	Gln	Ala	Asn	Arg	Leu	Gly	Val	Thr	Ile	Lys	Ala	Asp	Ile	Val
			245						250					255	
Lys	Gln	Lys	Leu	Pro	Thr	Asn	Asn	Gly	Gly	Phe	Lys	Ala	Ile	His	Phe
			260					265					270		
Gly	Lys	Thr	Asp	Glu	Arg	Met	Tyr	Thr	Glu	Leu	Thr	Thr	Asp	His	Pro
		275					280					285			
Ile	Asp	Leu	Cys	Arg	Tyr	Gln	Val	Ala	Asn	Gly	Tyr	Met	Gly	Arg	Val
	290					295					300				
Gly	Leu	Ile	Asn	Ser	Gly	Gly	Glu	Ser	His	Gly	Ala	Ser	Asp	Leu	Lys
305					310					315				320	
Asp	Ala	Val	Val	Thr	Ala	Val	Val	Asn	Lys	Arg	Ala	Gly	Gly	Met	Gly
			325						330					335	
Leu	Ile	Ser	Gly	Arg	Lys	Ala	Phe	Gln	Lys	Pro	Met	Asn	Glu	Gly	Val
			340				345						350		
Glu	Leu	Leu	His	Ala	Ile	Gln	Asp	Val	Tyr	Leu	Asp	Ala	Ser	Val	Thr
	355						360					365			
Ile	Ala														
	370														

<210> 5260
 <211> 248
 <212> PRT

<213> B.fragilis

<400> 5260

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Met Lys Lys Ile Val Leu Leu Arg His Gly Glu Ser Ala Trp Asn Lys
1      5      10      15
Glu Asn Arg Phe Thr Gly Trp Thr Asp Val Asp Leu Thr Glu Lys Gly
      20      25      30
Ile Ala Glu Ala Cys Lys Ala Gly Glu Leu Leu Lys Glu Asn Gly Phe
      35      40      45
Asn Phe Asp Lys Ala Tyr Thr Ser Tyr Leu Lys Arg Ala Val Lys Thr
      50      55      60
Leu Asn Cys Val Leu Asp Arg Met Asp Gln Asp Trp Ile Pro Val Glu
      65      70      75      80
Lys Ser Trp Arg Leu Asn Glu Lys His Tyr Gly Asp Leu Gln Gly Leu
      85      90      95
Asn Lys Ser Glu Thr Ala Ala Lys Tyr Gly Asp Glu Gln Val Leu Ile
      100     105     110
Trp Arg Arg Ser Tyr Asp Ile Ala Pro Asn Ala Leu Ser Glu Asp Asp
      115     120     125
Pro Arg Asn Pro Arg Phe Glu Asn Arg Tyr Gln Glu Val Pro Asp Ala
      130     135     140
Glu Leu Pro Arg Thr Glu Ser Leu Lys Asp Thr Ile Glu Arg Ile Met
      145     150     155     160
Pro Tyr Trp Lys Cys Ile Ile Phe Pro Asn Leu Lys Thr Ala Asp Glu
      165     170     175
Ile Leu Val Val Ala His Gly Asn Ser Leu Arg Gly Ile Ile Lys His
      180     185     190
Leu Lys His Ile Ser Asp Glu Glu Ile Val Lys Leu Asn Leu Pro Thr
      195     200     205
Ala Val Pro Tyr Val Phe Glu Phe Ser Asp Glu Leu Asn Leu Glu Lys
      210     215     220
Asp Tyr Phe Leu Gly Asp Pro Glu Glu Ile Arg Lys Leu Met Glu Ala
      225     230     235     240
Val Ala Asn Gln Gly Lys Lys Lys
      245

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<210> 5261

<211> 768

<212> PRT

<213> B.fragilis

<400> 5261

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Lys Pro Leu Ser Ala Gly Glu Arg Leu Ser Asn Arg Ala Leu Asn His
1      5      10      15
Lys His Pro Phe Gly Ser Ser Arg Phe Ile Cys Glu Tyr Asn Glu Val
      20      25      30
Tyr Leu Thr Leu His Thr Gln Cys Ile Phe His Asn Ile Asn Asn Asn
      35      40      45
Thr Met Lys Lys Leu Leu Ala Thr Leu Leu Ile Leu Val Ala Cys Ile
      50      55      60
His Val Asn Ala Gln Glu Ser Ile Gln Ile Arg Ile Ser Thr Asp Arg
      65      70      75      80
Thr Asp Leu Ile Leu Glu Val Ala Pro Asp Gly Arg Leu Tyr Gln Ser
      85      90      95
Tyr Leu Gly Asp Arg Leu Leu Asn Glu Gln Asp Leu Lys Asn Leu Ser
      100     105     110
Gly Ser Ser Arg Gly Trp Glu Val Tyr Pro Gly Ser Gly Gly Glu Asp
      115     120     125
Tyr Phe Glu Pro Ala Val Ala Ile Thr Asn Asn Asp Gly Asn Leu Ser

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130		135		140											
Thr	Ile	Leu	Arg	Tyr	Val	Ser	Ser	Glu	Gln	Lys	Ala	Val	Glu	Gly	Gly
145					150					155					160
Thr	Glu	Thr	Ile	Ile	Arg	Met	Lys	Asp	Asp	Gln	Tyr	Pro	Val	Asp	Val
				165					170						175
Thr	Leu	His	Tyr	Val	Ala	Tyr	Pro	Lys	Gln	Asn	Val	Ile	Lys	Thr	Trp
			180					185				190			
Ser	Glu	Ile	Lys	His	Gln	Gln	Lys	Lys	Pro	Val	Val	Leu	Trp	Arg	Tyr
		195					200				205				
Ala	Ser	Thr	Met	Leu	Tyr	Phe	Ser	Asn	Gln	Lys	Tyr	Tyr	Leu	Thr	Glu
	210					215					220				
Phe	Ser	Ser	Asp	Trp	Ala	Lys	Glu	Val	Gln	Met	Ser	Thr	Gln	Gln	Leu
225				230					235						240
Gln	Pro	Gly	Lys	Lys	Ile	Leu	Asp	Thr	Lys	Leu	Gly	Ser	Arg	Ala	Ala
			245						250					255	
Met	His	Met	Gln	Pro	Phe	Phe	Glu	Leu	Gly	Leu	Glu	Gln	Pro	Ala	Gln
			260					265				270			
Glu	His	Gln	Gly	Gln	Val	Val	Leu	Gly	Thr	Ile	Gly	Trp	Thr	Gly	Asn
	275						280					285			
Tyr	Gln	Phe	Thr	Phe	Glu	Val	Asp	Asn	Glu	Gly	Asp	Leu	Arg	Ile	Ile
290				295					300						
Pro	Ala	Ile	Asn	Pro	Tyr	Ala	Ser	Asp	Tyr	Gln	Leu	Lys	Ala	Asn	Glu
305				310					315						320
Thr	Phe	Thr	Thr	Pro	Glu	Phe	Ile	Phe	Thr	Leu	Ser	Asn	Asn	Gly	Thr
			325						330					335	
Gly	Glu	Ala	Ser	Arg	Asn	Leu	His	Asn	Trp	Ala	Arg	Asn	Tyr	Gln	Leu
			340					345				350			
Lys	Asp	Gly	Lys	Gly	Asp	Arg	Met	Thr	Leu	Leu	Asn	Asn	Trp	Glu	Asn
	355					360					365				
Thr	Tyr	Phe	Thr	Phe	Asp	Glu	Glu	Leu	Leu	Gly	Lys	Leu	Met	Lys	Glu
370				375					380						
Ala	Lys	His	Leu	Gly	Val	Asp	Met	Phe	Leu	Leu	Asp	Asp	Gly	Trp	Phe
385				390					395						400
Gly	Asn	Lys	His	Pro	Arg	Asn	Asp	Asp	His	Ala	Gly	Leu	Gly	Asp	Trp
			405					410						415	
Glu	Ala	Met	Lys	Ser	Lys	Leu	Pro	Gly	Gly	Ile	Pro	Ala	Leu	Val	Glu
		420						425					430		
Lys	Ala	Lys	Glu	Ala	Gly	Val	Lys	Phe	Gly	Ile	Trp	Ile	Glu	Pro	Glu
	435						440					445			
Met	Val	Asn	Pro	Lys	Ser	Asp	Leu	Phe	Glu	Thr	His	Pro	Glu	Trp	Ala
	450					455					460				
Ile	His	Tyr	Pro	Asn	Arg	Glu	Thr	Tyr	Tyr	Phe	Arg	Asn	Gln	Leu	Val
465				470					475						480
Leu	Asp	Leu	Ser	Asn	Pro	Lys	Val	Gln	Asp	Phe	Val	Phe	Gly	Val	Val
			485					490					495		
Asp	Lys	Ile	Met	Thr	Glu	Asn	Pro	Asp	Val	Ala	Phe	Phe	Lys	Trp	Asp
		500						505					510		
Cys	Asn	Ser	Pro	Ile	Thr	Asn	Ile	Tyr	Ser	Pro	Tyr	Leu	Lys	Asp	Lys
	515					520					525				
Gln	Gly	Gln	Leu	Tyr	Ile	Asp	His	Val	Arg	Gly	Ile	Tyr	Asn	Val	Leu
	530					535					540				
Lys	Arg	Val	Lys	Glu	Lys	Tyr	Pro	Asn	Val	Pro	Met	Met	Leu	Cys	Ser
545				550					555						560
Gly	Gly	Gly	Ala	Arg	Cys	Asp	Tyr	Glu	Ala	Leu	Lys	Tyr	Phe	Thr	Glu
			565					570					575		
Phe	Trp	Cys	Ser	Asp	Asn	Thr	Asp	Pro	Val	Glu	Arg	Leu	Phe	Ile	Gln
		580					585					590			
Trp	Gly	Phe	Ser	Gln	Phe	Phe	Pro	Ala	Lys	Ala	Met	Cys	Ala	His	Val
	595					600						605			

Thr	Ser	Trp	Asn	Ser	Lys	Thr	Ser	Val	Lys	Phe	Arg	Thr	Asp	Val	Ala
610						615					620				
Ser	Met	Cys	Lys	Leu	Gly	Phe	Asp	Ile	Gly	Leu	Lys	Asp	Met	Lys	Ala
625					630					635					640
Asp	Glu	Leu	Thr	Tyr	Cys	Gln	Glu	Ala	Val	Ala	Asn	Tyr	Lys	Arg	Leu
				645					650					655	
Lys	Pro	Val	Ile	Leu	Asp	Gly	Asp	Gln	Tyr	Arg	Leu	Val	Ser	Pro	Tyr
			660					665					670		
Asp	Gly	Asn	His	Met	Ala	Val	Met	Tyr	Thr	Ala	Pro	Asp	Ala	Ser	Lys
		675						680					685		
Ala	Val	Leu	Phe	Thr	Tyr	Asp	Ile	His	Pro	Arg	Phe	Gly	Glu	Lys	Leu
		690					695				700				
Leu	Pro	Val	Lys	Leu	Arg	Gly	Leu	Asp	Ala	Gln	Lys	Met	Tyr	Arg	Val
705					710					715					720
Lys	Glu	Ile	Asn	Leu	Met	Pro	Gly	Arg	Lys	Ser	Asn	Leu	Ser	Gly	Asn
				725					730					735	
Glu	Lys	Ile	Phe	Ser	Gly	Asp	Tyr	Leu	Met	Lys	Ile	Gly	Leu	Asn	Ala
			740					745					750		
Phe	Thr	Thr	Ser	Gln	Thr	Asn	Ser	Arg	Val	Ile	Glu	Leu	Val	Ala	Glu
		755					760						765		

<210> 5262

<211> 405

<212> PRT

<213> B.fragilis

<400> 5262

Met	Met	Lys	Leu	Phe	Arg	Glu	Ile	Leu	Ile	Ile	Cys	Leu	Leu	Gly	Lys
1				5					10					15	
Leu	Ile	Ala	Cys	Ser	Pro	Leu	Ala	Ser	Gly	Glu	Ile	Asn	Asp	Val	Trp
			20					25					30		
Gly	His	Lys	Gln	Val	Ala	Thr	Ile	Glu	Met	Ala	Gly	Ser	Asp	Ser	Val
			35				40					45			
Trp	Val	Cys	His	Leu	Ser	Met	Leu	Lys	Asp	Thr	Val	Thr	Val	Pro	Leu
	50					55				60					
Ser	Tyr	Phe	Val	Glu	Glu	Leu	Glu	Met	Val	Lys	Leu	Asp	Asn	Arg	Asp
65				70					75					80	
Ala	Ala	Leu	Val	Ser	Ser	Ser	Lys	Thr	Ile	Ile	Gly	Lys	Gln	Tyr	Ile
				85					90					95	
Leu	Val	His	Lys	Met	Gly	His	Val	Pro	Phe	Lys	Leu	Phe	Thr	Lys	Ser
			100					105					110		
Gly	Thr	Tyr	Leu	Arg	Asp	Ile	Gly	Ser	Phe	Gly	Gln	Gly	Ala	Gly	Glu
		115					120					125			
Tyr	Gly	Leu	Ala	Tyr	Asp	Ala	Gln	Met	Asp	Glu	Glu	Asn	Asn	Arg	Leu
	130					135				140					
Tyr	Val	Leu	Cys	Trp	Gln	Ala	Asp	His	Ile	Leu	Val	Phe	Asp	Leu	Gln
145					150					155					160
Gly	Asn	Ile	Leu	Gln	Pro	Ile	Arg	Leu	Ala	His	Trp	Ser	Pro	Lys	Gly
				165					170					175	
Val	Phe	His	Val	Glu	Thr	Glu	Arg	Gly	Arg	Val	His	Val	Cys	Ala	Leu
			180					185					190		
Ser	Phe	Asn	Arg	Asp	Phe	Val	Gly	Asp	Arg	His	Ser	Pro	Met	Ile	Trp
		195					200						205		
Thr	Gln	Ser	Leu	Asp	Gly	Lys	Ile	Ile	Lys	Glu	Leu	Pro	Ala	Gly	Tyr
	210					215					220				
Leu	Ala	Val	Asn	Asp	Tyr	Gly	Asn	Glu	Ile	Lys	Ser	Leu	Asn	Asn	Gly
225					230					235					240
Thr	Val	Met	Asp	Ile	Gly	Phe	Trp	Phe	Gly	Gly	Gln	Tyr	Arg	Asn	Asp
				245					250					255	

Ser Leu Tyr His Tyr Asn Asn Gln Glu Phe Arg Leu Leu Pro Arg Phe
 260 265 270
 Thr Leu Asp Tyr Gly Gly His Glu Leu Thr Pro His Ser Phe Gly Glu
 275 280 285
 Leu Pro Asn His Phe Trp Gly Glu Ile Ser Tyr Pro Val Arg Leu Ser
 290 295 300
 Pro His Ser Ser Thr Thr Thr Pro Pro Glu Tyr Tyr Met Val Asp Lys
 305 310 315 320
 His Thr Leu Arg Gly Ala Phe Val Glu Ile Tyr Asn Asp Phe Leu Gly
 325 330 335
 Gly Ile Pro Ala Asp Trp Phe Phe Ser Ser His Asp Gly Tyr Tyr Val
 340 345 350
 Trp Asn Val Glu Pro Val Arg Leu Lys Gln Met Val Glu Asp Arg Leu
 355 360 365
 Ser Ser Gly Glu Ile Val Ser Asp Ser Asp Arg Arg Lys Leu Thr Glu
 370 375 380
 Leu Leu Arg Ser Thr Lys Glu Asn Asp Asn Asn Tyr Ile Phe Tyr Gly
 385 390 395 400
 Arg Leu Lys Cys Arg
 405

<210> 5263

<211> 400

<212> PRT

<213> B.fragilis

<400> 5263

Leu Ile Phe Ala Thr Pro Leu Phe Tyr Glu Ile Ile His Leu Ser Gln
 1 5 10 15
 Cys Leu Phe Asn Phe Leu Gly Ile Ser Met Arg Leu Ile Tyr Phe Ile
 20 25 30
 Asn Ser Lys Tyr Asp Arg Asn Thr Cys Cys Cys Cys Met Ile Asn Gly
 35 40 45
 Phe Phe Gly Leu Gly His Tyr Ile Ile Ile Gly Ser Tyr Asn Asn Asn
 50 55 60
 Cys Asp Ile Gly His Leu Cys Thr Thr Gly Thr His Cys Ser Lys Cys
 65 70 75 80
 Leu Met Ser Arg Ser Ile Glu Glu Arg Asn Leu Thr Ser Ile Phe Gln
 85 90 95
 Cys Asn Met Ile Cys Thr Asn Met Leu Cys Asp Thr Ser Gly Phe Thr
 100 105 110
 Cys Asn Tyr Ile Cys Phe Thr Asn Val Val Lys Gln Arg Ser Phe Thr
 115 120 125
 Met Val Tyr Val Ser His Asp Cys Asn Asn Arg Ser Thr Met Phe Gln
 130 135 140
 Ile Phe Arg Arg Ile Phe Leu Phe Asn Asn Gly Leu Gly Tyr Phe Cys
 145 150 155 160
 Thr Asp Ile Phe Ser Leu Lys Ser Lys Phe Phe Ser His Lys Ile Asn
 165 170 175
 Arg Phe Cys Ile Gln Thr Leu Ile Asp Arg Asn His His Thr Asn Ala
 180 185 190
 His Thr Ser Ser Asp Asn Leu Ile Tyr Arg Tyr Val His His Ala Cys
 195 200 205
 Gln Phe Ile Ser Ser His Lys Phe Cys Gln Phe Gln Tyr Leu Ala Phe
 210 215 220
 Cys His Phe Leu Ile Phe Gln Phe Leu His Thr Val Gly Arg His Val
 225 230 235 240
 Thr Phe Phe Phe Thr Ile Phe Gly Thr Phe Val Leu Thr Phe Ala Cys
 245 250 255

Gln Thr Ser Gln Arg Phe Phe Asn Leu Leu Cys Tyr Ile Phe Phe Ala
 260 265 270
 Tyr Phe Leu Tyr Tyr Arg Leu Phe Glu Ala Val Phe Ile Ile Val
 275 280 285
 Ile Thr Val Ser Ile Leu Ser Ala Ala Thr Leu Leu Ile Ser Ser Thr
 290 295 300
 Val Ile Ile Arg Thr Leu Thr Val Trp Ser Arg Val Cys Lys Ile Arg
 305 310 315 320
 Ser Asn Ile Val His Ile Tyr Phe Phe Leu Ile Ile Val Asp Ala Ile
 325 330 335
 Thr Phe Leu Leu Thr Val Arg Ile Lys Val Phe Leu Thr Asn Asp Leu
 340 345 350
 Ser Leu Phe Thr Ile Phe Phe Thr Asp Phe Leu Asp Asp Gly Phe Leu
 355 360 365
 His Leu Phe Leu Leu Ile Leu Thr Lys Leu Phe Leu Leu Phe Thr Leu
 370 375 380
 Phe Pro Leu Phe Leu Phe Arg Phe Leu Leu Arg Thr Cys Arg Leu Ile
 385 390 395 400

<210> 5264

<211> 174

<212> PRT

<213> B.fragilis

<400> 5264

Phe Asn Ala Ala Lys Ser Ile Cys Pro Ile Thr Leu Ile Leu Asp Thr
 1 5 10 15
 Asn Ser Val Gly Arg Ile Leu Asn Thr Pro Ser Ser Ser Phe Ser Thr
 20 25 30
 Gly Val Thr Gly Ala Ser Ala Thr Gly Phe Ser Ser Phe Phe Ser Val
 35 40 45
 Phe Ser Gly Asp Thr Thr Thr Phe Gly Ser Ser Phe Leu Thr Ser Ser
 50 55 60
 Thr Thr Phe Phe Ser Val Ser Thr Gly Phe Ser Thr Thr Thr Gly Phe
 65 70 75 80
 Gly Ser Ser Phe Thr Gly Phe Gly Ser Glu Val Ala Gly Val Thr Val
 85 90 95
 Thr Ser Ser Phe Thr Ser Ile Thr Thr Gly Leu Thr Ser Ser Ala
 100 105 110
 Thr Phe Phe Ser Ser Ala Ala Thr Gly Cys Gly Phe Gly Ser Ser Phe
 115 120 125
 Ile Gly Ser Phe Ser Thr Phe Arg Phe Ser Leu Ser Lys Ser Ile Phe
 130 135 140
 Pro Thr Gly Leu Asn Phe Gly Arg Thr Ser Ser Gly Met Thr Val Leu
 145 150 155 160
 Ile Thr Ser Ser Ala Thr Val Phe Ser Gly Ser Phe Leu Ser
 165 170

<210> 5265

<211> 422

<212> PRT

<213> B.fragilis

<400> 5265

Ile Ile Met Ala Lys Lys Glu Glu Thr Ile Ser Leu Ile Asp Thr Phe
 1 5 10 15
 Ser Glu Phe Lys Glu Leu Lys Asn Ile Asp Arg Thr Thr Met Val Ser
 20 25 30
 Val Leu Glu Glu Ser Phe Arg Ser Val Ile Ala Lys Met Phe Gly Thr

35	40	45
Asp Glu Asn Tyr Asp Val Ile Val Asn Pro Asp Lys Gly Asp Phe Glu		
50	55	60
Ile Trp Arg Asn Arg Glu Val Val Ala Asp Glu Asp Leu Thr Asn Pro		
65	70	75
Asn Met Gln Ile Ser Leu Thr Glu Ala Gln Lys Ile Asp Ala Ser Tyr		
85	90	95
Glu Val Gly Glu Glu Val Thr Asp Glu Val Ile Phe Ala Lys Phe Gly		
100	105	110
Arg Arg Ala Ile Leu Asn Leu Arg Gln Thr Leu Ala Ser Lys Ile Leu		
115	120	125
Glu Leu Glu Lys Asp Ser Ile Tyr Asn Lys Tyr Ile Asp Lys Val Gly		
130	135	140
Thr Ile Ile Asn Ala Glu Val Tyr Gln Ile Trp Lys Lys Glu Met Leu		
145	150	155
Leu Leu Asp Asp Glu Gly Asn Glu Leu Leu Leu Pro Lys Thr Glu Gln		
165	170	175
Ile Pro Ser Asp Phe Tyr Arg Lys Gly Glu Thr Ala Arg Ala Val Val		
180	185	190
Ala Arg Val Asp Asn Lys Asn Asn Asn Pro Lys Ile Ile Leu Ser Arg		
195	200	205
Thr Ser Pro Val Phe Leu Gln Arg Leu Phe Glu Met Glu Val Pro Glu		
210	215	220
Ile Asn Asp Gly Leu Ile Thr Ile Lys Lys Ile Ala Arg Ile Pro Gly		
225	230	235
Glu Arg Ala Lys Ile Ala Val Glu Ser Tyr Asp Asp Arg Ile Asp Pro		
245	250	255
Val Gly Ala Cys Val Gly Val Lys Gly Ser Arg Ile His Gly Ile Val		
260	265	270
Arg Glu Leu Arg Asn Glu Asn Ile Asp Val Ile Asn Tyr Thr Ser Asn		
275	280	285
Ile Ser Leu Phe Ile Gln Arg Ala Leu Ser Pro Ala Lys Ile Ser Ser		
290	295	300
Ile Arg Leu Asn Glu Glu Arg Lys Ala Glu Val Phe Leu Lys Pro		
305	310	315
Glu Glu Val Ser Leu Ala Ile Gly Lys Gly Gly Leu Asn Ile Lys Leu		
325	330	335
Ala Ser Met Leu Thr Glu Tyr Thr Ile Asp Val Phe Arg Glu Leu Asp		
340	345	350
Glu Asn Ala Gln Asp Glu Asp Ile Tyr Leu Asp Glu Phe Arg Asp Glu		
355	360	365
Ile Asp Gly Trp Val Ile Asp Ala Ile Lys Ala Ile Gly Ile Asp Thr		
370	375	380
Ala Lys Ser Val Leu Asn Ala Pro Arg Glu Met Leu Ile Glu Lys Thr		
385	390	395
Asp Leu Glu Glu Glu Thr Val Asp Glu Val Leu Arg Ile Leu Lys Ser		
405	410	415
Glu Phe Glu Asp Asn Glu		
420		

<210> 5266

<211> 284

<212> PRT

<213> B.fragilis

<400> 5266

Leu Pro Phe Tyr Tyr Tyr Ala Asp Gly Arg Lys Phe His Ile Thr Met
1 5 10 15
Val Gly Arg Gly Tyr Phe Trp Lys Arg Ile Asp Asn Glu Ile Ile Asp


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      20      25      30
Lys Ile Met Leu Glu Ile Lys Asp Leu His Ala Ser Ile Asn Gly Lys
  35      40      45
Glu Ile Leu Lys Gly Ile Asn Leu Thr Val Lys Pro Gly Glu Val His
  50      55      60
Ala Ile Met Gly Pro Asn Gly Ser Gly Lys Ser Thr Leu Ser Ser Val
  65      70      75      80
Leu Val Gly Asn Pro Ala Phe Glu Val Thr Lys Gly Ser Ile Thr Phe
      85      90      95
Tyr Gly Lys Asn Leu Leu Glu Leu Ser Pro Glu Asp Arg Ser His Glu
  100      105      110
Gly Ile Phe Leu Ser Phe Gln Tyr Pro Val Glu Ile Pro Gly Val Ser
  115      120      125
Met Val Asn Phe Met Arg Ala Ala Val Asn Glu Gln Arg Lys Tyr Lys
  130      135      140
Gly Leu Pro Ala Leu Thr Ala Ser Glu Phe Leu Lys Leu Met Arg Glu
  145      150      155      160
Lys Arg Ala Val Val Glu Leu Asp Asn Lys Leu Ala Asn Arg Ser Val
      165      170      175
Asn Glu Gly Phe Ser Gly Gly Glu Lys Lys Arg Asn Glu Ile Phe Gln
  180      185      190
Met Ala Met Leu Glu Pro Arg Leu Ser Ile Leu Asp Glu Thr Asp Ser
  195      200      205
Gly Leu Asp Ile Asp Ala Leu Arg Ile Val Ala Glu Gly Val Asn Lys
  210      215      220
Leu Lys Thr Pro Asp Thr Ser Cys Ile Val Ile Thr His Tyr Gln Arg
  225      230      235      240
Leu Leu Asp Tyr Ile Lys Pro Asp Ile Val His Val Leu Tyr Lys Gly
      245      250      255
Arg Ile Val Lys Thr Ala Gly Pro Glu Leu Ala Leu Glu Leu Glu Glu
      260      265      270
Lys Gly Tyr Asp Trp Ile Lys Lys Glu Leu Gly Glu
  275      280

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<210> 5267

<211> 64

<212> PRT

<213> B.fragilis

<400> 5267

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Leu Trp Gly Tyr Trp Gln Gln Lys Pro Leu Tyr Thr Ser Leu Ala Val
1      5      10      15
Lys Leu Cys Pro Thr Val Thr Asp Ser Met Thr Val Ala Gln Ile Leu
  20      25      30
Ala Phe Ile Ile Ile Trp Ile Ala Val Ala Ala Asn Leu Tyr Ile Gly
  35      40      45
Gly Phe Ser Ile Asn Gln Gly Ile Gly Gly Gly Phe Thr Trp Leu Ala
  50      55      60

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<210> 5268

<211> 115

<212> PRT

<213> B.fragilis

<400> 5268

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Tyr Lys Pro Leu Asn Glu Thr Arg Ile Met Leu Leu Ala Thr Thr Pro
1      5      10      15
Ile Ile Glu Gly Lys Arg Ile Thr Thr Tyr Tyr Gly Ile Val Ser Gly
  20      25      30

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Glu	Thr	Ile	Ile	Gly	Ala	Asn	Val	Phe	Arg	Asp	Phe	Phe	Ala	Ser	Ile
		35					40				45				
Arg	Asp	Ile	Val	Gly	Gly	Arg	Ser	Gly	Ser	Tyr	Glu	Glu	Val	Leu	Arg
	50					55				60					
Glu	Ala	Lys	Asp	Thr	Ala	Leu	Lys	Glu	Met	Ser	Glu	Gln	Ala	Arg	Gln
	65				70				75					80	
Met	Gly	Ala	Asn	Ala	Val	Ile	Gly	Val	Asp	Leu	Asp	Tyr	Glu	Thr	Val
			85						90					95	
Gly	Gly	Ser	Gly	Ser	Met	Leu	Met	Val	Thr	Ala	Ser	Gly	Thr	Ala	Val
			100					105					110		
Phe	Leu	Glu													
		115													

<210> 5269

<211> 553

<212> PRT

<213> B.fragilis

<400> 5269

Ile	Ser	Leu	Tyr	Ile	Pro	Thr	Thr	Gly	Gln	Gly	Tyr	Thr	Gly	Tyr	Phe
1				5					10					15	
Thr	Leu	Gln	Lys	Gln	His	Leu	Met	Lys	Lys	Lys	Val	Thr	Thr	Tyr	
		20						25				30			
Cys	Cys	Leu	Leu	Leu	Leu	Ala	Ser	Phe	Phe	Thr	Thr	Val	Thr	Ala	Gln
		35					40					45			
Asn	Thr	Asn	Thr	Pro	Met	Met	Gly	Trp	Ser	Ser	Trp	Asn	Thr	Phe	Arg
	50				55					60					
Val	His	Ile	Asn	Glu	Glu	Leu	Ile	Lys	Glu	Thr	Ala	Asp	Ala	Met	Val
	65				70				75					80	
Asn	Arg	Gly	Leu	Lys	Asp	Val	Gly	Tyr	Gly	Tyr	Val	Asn	Ile	Asp	Asp
			85					90					95		
Gly	Tyr	Phe	Gly	Gly	Arg	Asn	Ser	Glu	Gly	Arg	Leu	Phe	Ala	Asn	Lys
		100						105					110		
Lys	Lys	Phe	Pro	Asn	Gly	Met	Arg	Val	Leu	Ser	Asp	Tyr	Ile	His	Ser
		115				120						125			
Lys	Gly	Leu	Lys	Ala	Gly	Ile	Tyr	Ser	Asp	Ala	Gly	Ser	Asn	Thr	Cys
	130				135					140					
Gly	Ser	Ile	Tyr	Asp	Ala	Asp	Thr	Leu	Gly	Ile	Gly	Val	Gly	Leu	Trp
	145				150				155					160	
Lys	His	Asp	Asp	Ile	Asp	Cys	Gln	Thr	Phe	Leu	Lys	Asp	Trp	Gly	Tyr
			165					170						175	
Asp	Phe	Ile	Lys	Ile	Asp	Trp	Cys	Gly	Gly	Glu	Ala	Thr	Gly	Gln	Ser
		180						185					190		
Glu	Gln	Gln	Arg	Tyr	Thr	Asp	Ile	Tyr	Lys	Ala	Ile	Arg	Arg	Thr	Gly
		195				200						205			
Arg	Thr	Asp	Val	Arg	Tyr	Asn	Ile	Cys	Arg	Trp	Gln	Phe	Pro	Gly	Thr
	210					215					220				
Trp	Ala	Thr	Gln	Leu	Ala	Gly	Ser	Trp	Arg	Ile	His	Thr	Asp	Ile	Asn
	225				230					235				240	
Pro	Arg	Phe	Thr	Thr	Ile	Asp	Arg	Ile	Ile	Glu	Arg	Asn	Leu	Tyr	Leu
			245					250						255	
Ala	Pro	Tyr	Ala	Ser	Pro	Gly	His	Tyr	Asn	Asp	Met	Asp	Met	Leu	Glu
		260						265				270			
Val	Gly	Arg	Gly	Leu	Thr	Glu	Asp	Glu	Glu	Lys	Thr	His	Phe	Gly	Ile
		275				280						285			
Trp	Ser	Ile	Leu	Ser	Ser	Pro	Leu	Met	Ile	Gly	Cys	Asp	Leu	Arg	Thr
	290					295					300				
Ile	Pro	Glu	Lys	Thr	Leu	Ser	Ile	Ile	Thr	Asn	Lys	Glu	Val	Ile	Ala
	305				310					315					320

Leu Asn Gln Asp Ser Leu Gly Leu Gln Ala Glu Ala Ile Glu Arg Gly
 325 330 335
 Lys Asp Tyr Leu Ile Leu Ser Lys Ala Ile Gln Lys Arg Glu Gly Lys
 340 345 350
 Leu Arg Ala Val Ala Leu Tyr Asn Arg Ser Asn Thr Asp Gln Gln Ile
 355 360 365
 Arg Val Asp Phe Asp Lys Leu Tyr Leu Ser Gly Asp Val Arg Val Arg
 370 375 380
 Asp Leu Trp Asn His Gln Glu Met Gly Thr Phe Thr Asp Tyr Tyr Glu
 385 390 395 400
 Thr Leu Val Pro Ala His Gly Thr Ala Leu Ile Arg Leu Glu Gly Ser
 405 410 415
 Lys Arg His Asp Arg Thr Cys Tyr Glu Ala Glu Tyr Ala Phe Met Gln
 420 425 430
 Glu Phe Leu Pro Asp Asn Lys Gln Ala Ala His Phe Thr Pro Lys Ser
 435 440 445
 Gly Ala Ser Gly Glu Tyr Ile Met Lys Asn Leu Gly Asn Ser Pro Ser
 450 455 460
 Asn Trp Ala Glu Phe Arg Asn Val Tyr Ile Ser Lys Gly Gly Asp Tyr
 465 470 475 480
 Gln Leu Lys Leu Thr Tyr Tyr Ser Gly Asp Lys Arg Asp Ile Gln Ile
 485 490 495
 Ala Val Asn Gly Thr Glu Tyr Lys Gln Ser Asn Leu Tyr Ser Gly Thr
 500 505 510
 Trp Asp Gln Ala Ala Thr Thr Thr Ile Lys Val Lys Leu Arg Lys Gly
 515 520 525
 Tyr Asn Thr Ile Arg Leu Tyr Asn Ser Tyr Gly Trp Ala Pro Asp Ile
 530 535 540
 Asp Lys Met Glu Ile Ile Lys Gly Arg
 545 550

<210> 5270

<211> 449

<212> PRT

<213> B.fragilis

<400> 5270

Ile Thr Arg Gln Phe Met Lys Asn Thr Asn Arg Ser Ile Leu His Lys
 1 5 10 15
 Asp Gly Val Ser Tyr Ile Leu Pro Phe Ile Leu Val Thr Ser Cys Phe
 20 25 30
 Ala Leu Trp Gly Phe Ala Asn Asp Ile Thr Asn Pro Met Val Lys Ala
 35 40 45
 Phe Ser Lys Ile Phe Arg Met Ser Val Thr Asp Gly Ala Leu Val Gln
 50 55 60
 Val Ala Phe Tyr Gly Gly Tyr Phe Ala Met Ala Phe Pro Ala Ala Met
 65 70 75 80
 Phe Ile Arg Lys Tyr Ser Tyr Lys Ala Gly Ile Leu Leu Gly Leu Gly
 85 90 95
 Leu Tyr Ala Leu Gly Ala Leu Leu Phe Phe Pro Ala Lys Met Thr Gly
 100 105 110
 Asp Tyr Tyr Pro Phe Leu Leu Ala Tyr Phe Ile Leu Thr Cys Gly Leu
 115 120 125
 Ser Phe Leu Glu Thr Ser Ala Asn Pro Tyr Ile Leu Ser Met Gly Thr
 130 135 140
 Glu Glu Thr Ala Thr Arg Arg Leu Asn Leu Ala Gln Ser Phe Asn Pro
 145 150 155 160
 Met Gly Ser Leu Leu Gly Met Tyr Val Ala Met Asn Phe Ile Gln Ala
 165 170 175

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Arg Leu Asn Pro Met Asp Thr Val Glu Arg Ser Gln Leu Ser Pro Ala
      180      185      190
Glu Phe Glu Val Leu Lys Glu Ser Asp Leu Ser Val Leu Ile Ala Pro
      195      200      205
Tyr Leu Ile Ile Gly Leu Val Ile Leu Ala Met Leu Phe Val Ile Arg
      210      215      220
Ala Val Lys Met Pro Lys Asn Gly Asp Lys Asn His Asn Ile Asp Phe
      225      230      235      240
Ile Pro Thr Leu Lys Arg Ile Phe Lys Ile Pro His Tyr Arg Glu Gly
      245      250      255
Val Ile Ala Gln Phe Phe Tyr Val Gly Ala Gln Ile Met Cys Trp Thr
      260      265      270
Phe Val Ile Gln Tyr Gly Thr Arg Leu Phe Met Ser Gln Gly Met Glu
      275      280      285
Glu Lys Ala Ala Glu Val Leu Ser Gln Glu Tyr Asn Ile Ile Ala Met
      290      295      300
Ile Ile Phe Cys Ile Ser Pro Phe Arg Val Tyr Ile Tyr Ser Ser Leu
      305      310      315      320
Pro Glu Ser Gly Asp Ala Ser Gln Asp Ser Cys Asp Cys Gly Trp Cys
      325      330      335
Phe Tyr Val Arg Cys Asp Phe Phe Ala Arg His Met Gly Ile Val Leu
      340      345      350
Phe Ser Ser Cys Phe Gly Leu Tyr Val Thr Asn Val Ser His Asp Leu
      355      360      365
Trp Pro Leu Leu Phe Val Val Trp Val Met Met Pro Asn Leu Gly Ala
      370      375      380
Ala Gly Leu Ile Met Ala Ile Leu Gly Gly Ser Val Leu Pro Pro Leu
      385      390      395      400
Gln Ala Cys Ile Ile Asp Gln His Thr Leu Leu Gly Met Pro Ala Val
      405      410      415
Asn Leu Ser Phe Ile Leu Pro Phe Ile Cys Phe Val Val Ile Ile Ile
      420      425      430
Tyr Gly His Arg Thr Cys Ala Arg Val Lys Lys Ile Lys Ala Ala Arg
      435      440      445
Lys

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<210> 5271

<211> 573

<212> PRT

<213> B.fragilis

<400> 5271

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Ala Lys Arg His Ile Pro Leu Ile Arg Leu Ser Asn Trp Asn Arg Asn
  1      5      10      15
Leu Thr Ser Leu Thr Lys Gly Leu Asn Phe Lys Ala Leu Val Ser Phe
      20      25      30
Lys Asn Trp Ser Lys Thr Thr Val Asn Arg Ser Phe Ser Pro Tyr Phe
      35      40      45
Tyr Glu Leu Gln Asn Pro Gln Glu Gln Glu Asp Gly Ser Tyr Leu Tyr
      50      55      60
Asp Tyr Asn Ser Ile Ser Lys Gly Arg Thr Ala Leu Glu Thr Ser Thr
      65      70      75      80
Ser Thr Thr Gly Asp Arg Leu Met Asn Leu Gln Ala Thr Leu Asn Tyr
      85      90      95
Gln Arg Met Phe Gly Asp Lys His Asp Val Gly Ala Met Leu Val Tyr
      100      105      110
Leu Gln Arg Glu Tyr Asn Leu Asn Asn Pro Asp Asn Asn Tyr Tyr Asn
      115      120      125

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Thr Leu Pro Glu Arg Asn Gln Gly Leu Ala Gly Arg Val Thr Tyr Ala
 130 135 140
 Tyr Asp Gly Arg Tyr Leu Ala Glu Phe Asn Phe Gly Tyr Asn Gly Ser
 145 150 155 160
 Glu Asn Phe Glu Lys Gly Ser Arg Tyr Gly Phe Phe Pro Ser Leu Ala
 165 170 175
 Val Gly Tyr Leu Ile Ser Asn Glu Lys Phe Phe Glu Pro Leu Thr Lys
 180 185 190
 Val Ile Ser Asn Leu Lys Ile Arg Ala Ser Tyr Gly Leu Val Gly Asn
 195 200 205
 Ala Asp Ile Gly Ser Asn Arg Phe Pro Tyr Leu Thr Lys Val Asp Leu
 210 215 220
 Gly Gly Ala Gly Phe Val Phe Gly Asp Gln Trp Gln Thr Ser Ser Asn
 225 230 235 240
 Gly Ala Thr Ile Thr Thr Tyr Gly Ala Glu Lys Val Thr Trp Glu Ile
 245 250 255
 Gly Lys Lys Tyr Asn Val Gly Phe Asp Leu Gly Leu Phe Asn Lys Leu
 260 265 270
 Ser Leu Asn Val Asp Phe Phe Arg Glu Asp Arg Lys Asp Ile Phe Leu
 275 280 285
 Arg Arg Asn Thr Ile Pro Ala Glu Ser Gly Ile Thr Gly Asp Leu Arg
 290 295 300
 Pro Tyr Gly Asn Leu Gly Lys Val Arg Asn Gln Gly Val Asp Met Ser
 305 310 315 320
 Leu Asp Tyr Asn His Ala Val Ser Lys Asp Phe Met Ile Ser Ala Lys
 325 330 335
 Gly Thr Phe Thr Tyr Ala Lys Asn Gln Tyr Met Glu Ile Asp Glu Pro
 340 345 350
 Asp Tyr Glu Tyr Ala Tyr Met Ser Gln Val Gly Arg Pro Leu Asn Gln
 355 360 365
 Tyr Lys Gly Tyr Ile Ala Leu Gly Leu Phe Lys Asp Gln Glu Glu Ile
 370 375 380
 Asp Asn Ser Pro Lys Gln Ile Leu Thr Gly Val Val Gln Pro Gly Asp
 385 390 395 400
 Ile Lys Tyr Ala Asp Leu Asn Asn Asp Gly Lys Ile Asp Gly Asn Asp
 405 410 415
 Gln Thr Tyr Ile Gly Asn Pro Glu Leu Pro Gln Ile Ser Tyr Gly Leu
 420 425 430
 Gly Val Ser Ile Gln Tyr Lys Lys Trp Asp Ala Ser Ile Phe Phe Gln
 435 440 445
 Gly Val Gly Lys Arg Ser Ile Met Leu Ser Asp Ile His Pro Phe Gly
 450 455 460
 Gly Glu Ser Tyr Gly Val Met Gln Phe Val Ala Asp Asn His Trp Thr
 465 470 475 480
 Glu Ala Asn Pro Asn Pro Glu Ala Met Tyr Pro Arg Leu Thr Asn Gly
 485 490 495
 Lys Asn Asn Asn Asn Asn Pro Asn Ser Thr Tyr Trp Leu Arg Asp Gly
 500 505 510
 Ser Tyr Ile Arg Leu Lys Asn Val Glu Leu Gly Tyr Ser Tyr Lys Phe
 515 520 525
 Leu Arg Ala Tyr Ile Ser Gly Gln Asn Leu Leu Thr Phe Ser Lys Phe
 530 535 540
 Lys Leu Trp Asp Pro Glu Leu Tyr Thr Ser Asn Gly Leu Lys Tyr Pro
 545 550 555 560
 Thr Gln Ile Met Gly Ser Ile Gly Leu Gln Phe Thr Phe
 565 570

<210> 5272

<211> 555

<212> PRT

<213> B.fragilis

<400> 5272

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Asn Gln Cys Lys Cys Met Lys Lys Lys Ala Ile Pro Cys His Lys Ala
1      5      10      15
Gly Arg Ile Thr Ser Phe Phe Leu Leu Ile Ser Ile Phe Leu Leu Ile
      20      25      30
Pro Ser Ile Thr Thr Pro Val Tyr Ala Val Glu Thr Tyr Thr Gln Gln
      35      40      45
Thr Val Phe Thr Leu His Ala Thr Asn Lys Thr Val Lys Glu Val Phe
      50      55      60
Glu Tyr Ile Glu Lys Asn Ser Glu Phe Val Val Leu Tyr Ser Lys Asp
65      70      75      80
Leu Leu Pro Val Leu Gln Lys Lys Val Ser Val Ser Ile Asp Lys Gln
      85      90      95
Asn Val Glu Ser Ile Leu Asn Ile Leu Ser Lys Glu Ala Gly Leu Lys
      100     105     110
Tyr Asn Ile Asn Asp Arg Gln Ile Thr Ile Thr Lys Val Thr Ala Glu
      115     120     125
Ala Pro Gln Gln Glu Lys Lys Ile Lys Ile Thr Gly Gln Val Leu Asp
      130     135     140
Glu Asn Gly Glu Gly Ile Pro Gly Ala Asn Ile Val Ile Lys Gly Asn
145     150     155     160
Ser Thr Leu Gly Thr Val Thr Asn Val Glu Gly Asn Phe Thr Leu Met
      165     170     175
Ala Pro Glu Asn Ser Thr Leu Val Ala Ser Phe Ile Gly Tyr Thr Pro
      180     185     190
Val Glu Ile Pro Leu Lys Gly Lys Lys Ile Val Val Phe Lys Leu Val
      195     200     205
Pro Asp Ala Gln Ser Leu Glu Glu Val Val Val Val Gly Phe Gly Thr
      210     215     220
Gln Lys Lys Ala Ser Val Val Gly Ala Val Gln Ser Ile Lys Pro Ala
225     230     235     240
Glu Leu Arg Val Pro Ser Ser Asn Leu Ser Thr Ser Phe Ala Gly Arg
      245     250     255
Ile Ala Gly Val Ile Ser Met Gln Arg Thr Gly Glu Pro Gly Ala Asp
      260     265     270
Gly Ala Asn Phe Trp Ile Arg Gly Ala Ala Thr Phe Ser Gly Thr Thr
      275     280     285
Asp Pro Leu Ile Phe Ile Asp Gly Val Glu Val Ser Ala Gly Asp Met
      290     295     300
Asn Ala Ile Pro Ser Glu Ala Ile Glu Asn Phe Ser Ile Leu Lys Asp
305     310     315     320
Ala Ser Ala Thr Ala Leu Tyr Gly Ala Arg Gly Ala Asn Gly Val Ile
      325     330     335
Leu Ile Thr Thr Arg Thr Gly Lys Asp Leu Glu Lys Ala Arg Ile Asn
      340     345     350
Val Arg Ile Asp Asn Thr Phe Thr Ala Pro Thr Arg Thr Leu Lys Leu
      355     360     365
Ala Asp Ala Val Thr Ala Met Lys Leu Arg Asn Glu Ala Ile Leu Thr
      370     375     380
Arg Asn Pro Asp Gly Thr Pro Ala Phe Ser Asp Asp Lys Ile Gln Gly
385     390     395     400
Thr Leu Glu Gly Arg Asn Gln Tyr Val Tyr Pro Asn Val Asp Trp Phe
      405     410     415
Asp Tyr Met Phe Lys Asp Tyr Ser Met Asn Gln Ser Ala Asn Leu Asn
      420     425     430
Val Met Gly Gly Thr Lys Lys Val Asp Tyr Phe Ile Ser Ala Ser Ile

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435	440	445
Asn Asn Asp Asn Gly Met Leu Lys Lys Asp Pro Asn Asn Thr Phe Asp		
450	455	460
Asn Asn Ile Gln Asn Leu Arg Tyr Ser Phe Gln Ser Asn Val Gly Ala		
465	470	475
Trp Leu Thr Ser Ser Thr Lys Val Asn Val Arg Ile Asn Ser Gln Ile		
485	490	495
Val Asn Tyr Asn Gly Pro Ser Thr Ser Met Asp Asp Leu Tyr Lys Tyr		
500	505	510
Val Met Glu Ala Pro Ser Met Tyr Phe Ala Pro Val Tyr Pro Asn Ile		
515	520	525
Asn Arg Glu Asp His Thr Ile Phe Gly Asn Lys Ser Gly Gly Pro Ile		
530	535	540
Gly Ser Glu Gly Phe Ser Ile Tyr Arg Asn Pro		
545	550	555

<210> 5273

<211> 136

<212> PRT

<213> B.fragilis

<400> 5273

Ile Leu Arg Lys Glu Val Tyr Ile Leu Tyr Phe Cys Ser Ala His Met	
1 5 10 15	
Val Thr Ile Thr Leu Tyr Met Asn Asn Asn Ile Glu Tyr Ile Ser Lys	
20 25 30	
Ile Lys Lys Gly Glu Glu Thr Ser Phe Arg His Phe Val Asn Ser Tyr	
35 40 45	
Ser Lys Asp Leu Phe Tyr Tyr Ala Gln Cys Phe Val Arg Ser Lys Glu	
50 55 60	
Thr Ala Glu Glu Val Val Ser Asp Val Phe Leu Asp Val Trp Arg His	
65 70 75 80	
Arg Glu Glu Ile Asp Glu Ile Lys Asn Ile Lys Ala Trp Leu Leu Thr	
85 90 95	
Leu Thr His Asn Lys Ala Ile Phe Tyr Leu Arg Lys Ala Glu Asn Ser	
100 105 110	
Ser Glu Ile Ala Ser Trp Glu Glu Ile Asp Asp Phe Gln Ile Ile Gly	
115 120 125	
Asn Leu Gln Leu Pro Met Lys Arg	
130 135	

<210> 5274

<211> 616

<212> PRT

<213> B.fragilis

<400> 5274

Ile Ile Met Lys Leu Lys Asn Ile Ile Val Ala Leu Leu Ile Gly Ala	
1 5 10 15	
Ser Leu His Ser Cys Asp Tyr Leu Asp Ile Val Pro Asp Asp Thr Pro	
20 25 30	
Ile Leu Ala Asp Ala Phe Lys Asn Glu Gln Thr Ala Glu Asn Phe Val	
35 40 45	
Phe Ala Cys Tyr Ser Phe Ile Pro Asn Tyr Leu Asn Phe Arg Gln Asn	
50 55 60	
Phe Ser Trp Cys Thr Thr Pro Glu Thr Val Gly Ser Ala His Trp Thr	
65 70 75 80	
Thr Thr Trp Phe Thr Phe Met Arg Met Gln Gln Gly Leu Tyr Asn Ser	
85 90 95	

Ala Asp Pro Ile Ile Asp Val Trp Gln Ser Ser Tyr Asn Gly Ile Arg
 100 105 110
 Gln Cys Tyr Thr Phe Leu Asp Asn Ile Asp Asp Val Lys Pro Ser Gln
 115 120 125
 Ile Ser Glu Ala Asp Leu Ala Lys Lys Val Leu Trp Lys Gly Glu
 130 135 140
 Val Lys Phe Leu Ile Ala Tyr Tyr His Tyr Leu Leu Leu Gln Asn Tyr
 145 150 155 160
 Gly Pro Ile Val Ile Leu Asp Glu Ala Ile Pro Leu Asn Ala Pro Lys
 165 170 175
 Glu Glu Leu Phe Lys Pro Arg Val Pro Tyr Asp Glu Cys Val Ser Arg
 180 185 190
 Ile Ala Gln Met Phe Asp Asn Ala Ser Ala Asp Leu Pro Met Thr Val
 195 200 205
 Lys Ala Ser Asn Tyr Gly Arg Ala Thr Lys Val Ile Ala Gln Ala Leu
 210 215 220
 Lys Ala Arg Met Tyr Leu Tyr Ala Ala Ser Pro Gln Phe Asn Gly Asn
 225 230 235 240
 Ala Asp Met Tyr Lys Asn Phe Lys Asn Lys Asp Gly Gln Leu Leu Met
 245 250 255
 Asn Leu Thr Tyr Asp Lys Asn Lys Trp Lys Thr Ala Met Asp Glu Cys
 260 265 270
 Lys Lys Ala Ile Asp Met Ala His Gln Ala Gly Ala Glu Leu Tyr Lys
 275 280 285
 Tyr Thr Lys Lys Gly Asn Leu Pro Glu Phe Asn Gln Ala Ile Ala Asn
 290 295 300
 Ala Arg Lys Pro Val Val Asp Ala Trp Asn Lys Glu Leu Ile Trp Gly
 305 310 315 320
 Tyr Ser Gly Trp Lys Glu Thr Trp Ala Asp Gly Asn Ser Ile Gln Thr
 325 330 335
 His Val Ile Pro Lys Gly Ile Ser Thr Ser Ser Gly Ala Pro Tyr Gly
 340 345 350
 Ala Leu Gly Ala Thr Ala Phe Ser Ala Asp Met Tyr Leu Thr Lys Asn
 355 360 365
 Gly Leu Pro Ile Asp Glu Asp Pro Glu Phe Asp Tyr Ala His Arg Phe
 370 375 380
 Thr Val Ala Glu Gly Asp Ser Val Ala Val Leu His Arg Asn Arg Glu
 385 390 395 400
 Pro Arg Phe Tyr Gly Ser Ile Gly Phe Asn Arg Gly Asp Tyr Leu Ile
 405 410 415
 Asn Gly Asp Thr Ile Asn Leu Lys Met Arg Phe Lys Glu Gln Asn Gly
 420 425 430
 Thr Arg Asp Ala Gly Ser Asp Gln Leu Tyr Gly Ser Tyr Ala Ile Ala
 435 440 445
 Lys Leu Ala His Pro Glu Thr Phe Val Ser Gly Thr Ser Asn Ser Leu
 450 455 460
 Val Ala Phe Pro Phe Pro Ile Ile Arg Leu Gly Glu Leu Tyr Leu Asp
 465 470 475 480
 Tyr Ala Glu Ala Tyr Phe Glu Tyr Asn Gly Thr Leu Glu Gly Asp Ala
 485 490 495
 Leu Thr Tyr Phe Asn Leu Ile Arg Gln Arg Ala Gly Ile Pro Asn Val
 500 505 510
 Glu Val Ser Tyr Lys Gly Leu Pro Ser Gly Asp Lys Leu Arg Glu Val
 515 520 525
 Ile His Arg Glu Arg Thr Ile Glu Leu Met Phe Glu Gly His Met Ser
 530 535 540
 Tyr Asp Tyr Arg Arg Trp Leu Ile Ala Leu Lys Glu Trp Ser Gly Met
 545 550 555 560
 Glu Asn Gly Met Ile Gly Leu Asn Ser Tyr Gly Thr Thr Asn Glu Glu

			565					570					575
Tyr	Tyr	Lys	Asn	Ala	Arg	Leu	Asp	Ala	Gln	Pro	Phe	Ile	Phe
			580					585					590
Glu	Gln	Tyr	Leu	Ser	Pro	Ile	Lys	Gln	Asp	Tyr	Leu	Asn	Val
		595					600				605		
Asn	Leu	Val	Gln	Asn	Pro	Gly	Trp						
	610					615							

<210> 5275
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 5275

Thr	Ile	Lys	Lys	Glu	Lys	Gly	Cys	Arg	Asn	Pro	Ser	Phe	Ile	Ile	Tyr
1				5					10					15	
Leu	Tyr	Gly	Ser	Val	Val	Gly	Ser	Asn	Thr	Val	Arg	Tyr	Leu	Leu	Arg
			20					25					30		
Leu	Pro	Leu	Val	Asp	Gly	Gly	Lys	Thr	Asp	Leu	Leu	Pro	Lys	Lys	Val
		35					40					45			
Lys	Asp	Arg	Ala	Leu	Lys	Ser	Phe	Asn	Thr	Phe	Gln	Gln	Ala	Pro	Ile
	50					55					60				
Lys	His	Lys	Lys	Met	Ser	Gln	Lys	Gln	Gln	Leu	Ser	Arg	His	Phe	Asn
65				70					75					80	
Ile	Cys	Gln	Asn	Thr	His	Ala	Ser	Glu	His	Leu	Thr	Asp	Pro	Phe	Asp
			85						90					95	
Thr	Ser	Tyr	Lys	Ser	Ile	Asn	Phe	Leu	Phe	Cys	Ile	Ile	His	Gly	Lys
			100					105					110		

<210> 5276
 <211> 377
 <212> PRT
 <213> B.fragilis

<400> 5276

Lys	Gln	His	Glu	Ser	Asn	Ile	Glu	Asn	Arg	Met	Arg	Cys	Leu	Thr	Ile
1			5						10					15	
Leu	Leu	Gly	Asn	Cys	Phe	Leu	Leu	Leu	Val	Ser	Leu	Ala	Ser	Cys	Gly
			20					25					30		
Lys	Val	Ser	Leu	Ala	Glu	Glu	Ala	Val	Phe	Ser	Ile	Pro	Val	Asp	Thr
		35					40					45			
Thr	Phe	Met	Arg	Leu	Arg	Gln	Trp	Glu	Trp	Tyr	Cys	Gln	Lys	Arg	Ala
	50					55					60				
Asp	Ser	Cys	Leu	Thr	Glu	Asn	Asn	Tyr	Gln	Gly	Ala	Leu	Ser	Trp	Leu
65				70					75					80	
Asp	Ser	Ala	Arg	Ile	Gln	Val	Glu	His	Tyr	Gly	Arg	Pro	Tyr	Tyr	Ile
			85						90					95	
Leu	Ala	Arg	Gly	Asp	Val	Tyr	Tyr	Ser	Ile	His	Gln	Tyr	Asp	Ser	Ala
			100					105					110		
Arg	Arg	Tyr	Phe	Ser	Met	Ala	Val	His	Ser	Ile	His	Pro	His	Ile	Ala
		115					120					125			
Ile	Glu	Ala	Trp	Arg	Lys	Leu	Ala	Glu	Leu	Glu	Leu	Met	Glu	Gly	Asn
	130					135					140				
Glu	Lys	Gln	Gly	Phe	Tyr	Ser	Thr	Gln	Lys	Ala	Asp	Ala	Leu	Phe	Arg
145				150						155				160	
Val	Glu	Ile	Gly	His	Val	Gln	Ser	Asp	Asn	Ser	Glu	Ala	Leu	Tyr	Gln
			165						170					175	
Glu	Glu	Arg	Leu	Lys	Asn	Glu	Leu	Asn	Gln	Leu	Lys	Ile	Ala	Lys	Gln
			180					185					190		

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Asn Arg Glu Ile Ala Met Leu Thr Leu Ser Leu Cys Leu Ile Ile Leu
 195                               200           205
Ile Ala Leu Phe Ile Phe Tyr Arg Gln Asn Lys Ile Lys Arg Glu Lys
 210                               215           220
Glu Arg Leu Leu Leu Glu Lys Ala Lys Leu Glu Gln Glu Asn Gln
225                               230           235           240
Ile Leu Lys Gln Thr Glu Glu Leu Ser Ala Leu Arg Glu Lys Glu Ala
                245                               250           255
Val Leu Arg Glu Ser Leu Phe Arg Lys Val Asp Val Leu Arg Lys Ile
                260                               265           270
Pro Ser Leu Asn Glu Glu Glu Gln Glu Ser Gly Glu His Arg Ile Ala
                275                               280           285
Leu Ser Glu Arg Glu Trp Glu Glu Ile Arg Gln Thr Val Asp Asn Ala
                290                               295           300
Tyr Asp Gly Phe Ser Gln Arg Leu Leu Ala Arg Phe Pro Leu Leu Thr
305                               310           315           320
Leu Lys Asp Ile Tyr Phe Cys Cys Leu Val Lys Ile Asn Val Ser Ile
                325                               330           335
Lys Asp Leu Ser Asp Ile Tyr Cys Ile Ser Arg Thr Ser Val Ser Lys
                340                               345           350
Lys Lys Phe Arg Ile Lys Arg Glu Lys Leu Gly Ala Glu Asp Ser Asp
                355                               360           365
Ser Leu Asp Asp Phe Leu Arg Gly Phe
 370                               375

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<210> 5277

<211> 156

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (76)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5277

```

Ser Met Ile Glu Lys Arg Thr Val Cys Gln Ile Val Glu Glu Trp Leu
 1                               5           10           15
Glu Asp Lys Asp Tyr Phe Leu Val Glu Val Thr Val Ser Pro Asp Asp
                20                               25           30
Lys Ile Val Val Glu Ile Asp His Ala Glu Gly Val Trp Ile Glu Asp
                35                               40           45
Cys Val Glu Leu Ser Arg Phe Ile Glu Ser Lys Leu Asn Arg Glu Glu
                50                               55           60
Glu Asp Tyr Glu Leu Glu Val Arg Ser Ala Gly Xaa Arg Gln Pro Phe
        65                               70           75           80
Lys Val Leu Gln Gln Tyr Tyr Asn His Ile Gly Leu Glu Val Glu Val
                85                               90           95
Leu Thr Lys Gly Gly Arg Lys Leu Ser Gly Val Leu Lys Asp Ala Asp
                100                              105           110
Glu Glu Lys Phe Val Val Thr Val Gln Lys Lys Val Lys Pro Glu Gly
                115                              120           125
Ala Lys Arg Pro Gln Leu Val Glu Glu Asp Glu Thr Phe Thr Tyr Asp
                130                              135           140
Asp Ile Lys Tyr Thr Lys Tyr Leu Ile Ser Phe Lys
        145                              150           155

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<210> 5278

<211> 521

<212> PRT

<213> B.fragilis

<400> 5278

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Pro Asn Lys Glu Gly Ala Val Leu Val Ile Leu Ser Tyr Gly Lys Leu
1          5          10          15
Cys Gly Asp Leu Leu Ser Cys Ser Lys Arg Gly Tyr Thr Thr Ile Tyr
20          25          30
Ile Gln Ile Lys Met Met Gln Gln Glu Glu Pro Asn Lys Tyr Val Lys
35          40          45
Glu Leu Thr Gln Glu Lys Tyr Lys Tyr Gly Phe Thr Thr Glu Val His
50          55          60
Thr Asp Ile Ile Glu Lys Gly Leu Asn Glu Asp Val Val Arg Leu Ile
65          70          75          80
Ser Ser Lys Lys Asn Glu Pro Glu Trp Leu Leu Glu Phe Arg Leu Lys
85          90          95
Ala Tyr Arg His Trp Leu Thr Leu Glu Met Pro Thr Trp Ala His Leu
100         105         110
Arg Ile Pro Glu Ile Asp Tyr Gln Ala Ile Ser Tyr Tyr Ala Asp Pro
115         120         125
Thr Lys Lys Lys Glu Gly Pro Lys Ser Met Asp Glu Val Asp Pro Glu
130         135         140
Leu Ile Lys Thr Phe Asn Lys Leu Gly Ile Pro Leu Glu Glu Gln Met
145         150         155         160
Ala Leu Ser Gly Met Ala Val Asp Ala Val Met Asp Ser Val Ser Val
165         170         175
Lys Thr Thr Phe Lys Glu Thr Leu Met Glu Lys Gly Ile Ile Phe Cys
180         185         190
Ser Phe Ser Glu Ala Val Arg Glu His Pro Asp Leu Val Lys Lys Tyr
195         200         205
Leu Gly Ser Val Val Gly Tyr Arg Asp Asn Phe Phe Ala Ala Leu Asn
210         215         220
Ser Ala Val Phe Ser Asp Gly Ser Phe Val Tyr Ile Pro Lys Gly Val
225         230         235         240
Arg Cys Pro Met Glu Leu Ser Thr Tyr Phe Arg Ile Asn Ala Ala Asn
245         250         255
Thr Gly Gln Phe Glu Arg Thr Leu Ile Val Ala Asp Asp Asp Ser Tyr
260         265         270
Val Ser Tyr Leu Glu Gly Cys Thr Ala Pro Met Arg Asp Glu Asn Gln
275         280         285
Leu His Ala Ala Ile Val Glu Ile Met Val His Asp Arg Ala Glu Val
290         295         300
Lys Tyr Ser Thr Val Gln Asn Trp Tyr Pro Gly Asp Ala Glu Gly Lys
305         310         315         320
Gly Gly Val Tyr Asn Phe Val Thr Lys Arg Gly Asn Cys Lys Gly Val
325         330         335
Asp Ser Lys Leu Ser Trp Thr Gln Val Glu Thr Gly Ser Ala Ile Thr
340         345         350
Trp Lys Tyr Pro Ser Cys Ile Leu Ser Gly Asp Asn Ser Thr Ala Glu
355         360         365
Phe Tyr Ser Val Ala Val Thr Asn Asn Tyr Gln Gln Ala Asp Thr Gly
370         375         380
Thr Lys Met Ile His Leu Gly Lys Asn Thr Arg Ser Thr Ile Val Ser
385         390         395         400
Lys Gly Ile Ser Ala Gly Lys Ser Glu Asn Ser Tyr Arg Gly Leu Val
405         410         415
Arg Val Ala Glu Lys Ala Asp Asn Ala Arg Asn Tyr Ser Gln Cys Asp
420         425         430
Ser Leu Leu Leu Gly Asp Lys Cys Gly Ala His Thr Phe Pro Tyr Met

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435	440	445
Asp Ile His Asn Glu Thr	Ala Val Val Glu His Glu	Ala Thr Thr Ser
450	455	460
Lys Ile Ser Glu Asp Gln	Ile Phe Tyr Cys Asn Gln	Arg Gly Ile Ser
465	470	475
Thr Glu Asp Ala Ile Gly	Leu Ile Val Asn Gly	Tyr Ala Lys Glu Val
485	490	495
Leu Asn Lys Leu Pro Met	Glu Phe Ala Val Glu	Ala Gln Lys Leu Leu
500	505	510
Thr Ile Ser Leu Glu Gly	Ser Val Gly	
515	520	

<210> 5279

<211> 81

<212> PRT

<213> B.fragilis

<400> 5279

Pro Arg His Trp Arg Arg	Phe His Leu Ala Gly	Leu Asn Arg Met Leu
1	5	10
Glu Ala Gly Leu Gly	Ala Leu Lys Tyr	Leu Leu Val Ser Leu Val
20	25	30
Ile Cys Val Ile Gln	Phe Ile Asp Ser	Ser Gln Leu Ile Ser Gln
35	40	45
Thr Lys Lys Glu Gln	Ser Leu Leu Tyr Tyr	Leu Met Glu Ser Phe Ala
50	55	60
Gly Ile Phe Phe Pro	Ala Ala Lys Glu	Val Thr Gln Gln Tyr Ile Phe
65	70	75
Lys		80

<210> 5280

<211> 446

<212> PRT

<213> B.fragilis

<400> 5280

Leu Phe Thr Trp Phe	Leu Val Leu Gly	Asn Leu Phe Val	His Ala Asn
1	5	10	15
Leu Arg Asn Ile Leu	Tyr Asn Met Leu	Ile Tyr Ser Val	Val Ser Tyr
20	25	30	
Phe Phe Leu Lys Tyr	Phe Val Tyr Ile	Pro Phe Cys Phe	Ser Ser Ala
35	40	45	
Arg Trp Leu Ile Leu	Gln Tyr Gln Asn	Phe Lys Asn Val	Arg Asp Met
50	55	60	
Leu Asn Arg Leu Asn	Tyr Phe Ile Met	Leu Ala Gly Leu	Leu Val Leu
65	70	75	80
Val Ala Cys Ser Ser	Asn Ser Gly Lys	Gln Val Glu Val	Ala Asn Thr
85	90	95	
Pro Phe Val Tyr Asp	Gly Leu Lys Glu	Tyr Pro Val Lys	Glu Leu Lys
100	105	110	
Leu Ser Asp Leu Ala	Val Ser Asp Tyr	Val Leu Leu Lys	Asp Asp Glu
115	120	125	
Asn Ser Leu Leu Gly	Arg Leu Pro Thr	Asn Pro Cys Met	Gln Val Thr
130	135	140	
Glu Asp Arg Ile Tyr	Ile Gln Asp Glu	Glu Gln Ala Ile	Phe Ile
145	150	155	160
Phe Asp Arg Gln Gly	Asn Pro Leu Leu	Gln Met Arg His	Lys Gly Gly
165	170	175	

Gly Pro Gln Glu Trp Ala Ser Leu Asn Ser Phe Tyr Val Asp Ser Pro
 180 185 190
 Asn Lys Glu Ile Ile Val Leu Asp Trp Ala Lys Lys Phe Ile Val Tyr
 195 200 205
 Asp Leu Asn Gly Lys Phe Lys Arg Ser Phe Pro Thr Pro Gly Cys Ser
 210 215 220
 Trp Lys Phe Ala Asn Leu Asn Asp Glu Ala Val Leu Ile Tyr Cys Pro
 225 230 235 240
 Phe Thr Asn Arg Asn Asn Gly Glu Ala Val Cys Ile Leu Ser Lys Lys
 245 250 255
 Asp Gly Lys Lys Leu Tyr Val Cys Pro Ile Thr Ile Asp Asn Phe Val
 260 265 270
 Trp Asp Ser Glu Gly Arg Ile Gly Tyr Glu Pro Leu Lys Pro Ala Tyr
 275 280 285
 Gly Gly Ile Leu Phe Ser Asp Leu Ser Leu Lys Gly Val Tyr Phe Ile
 290 295 300
 Asp Ala Glu Thr Tyr Glu Val Lys Gln Val Ile Asp Glu Val Thr Glu
 305 310 315 320
 Tyr Lys Phe Glu Asn Ala Glu Phe Val Lys Leu His Pro Ala Ile Asp
 325 330 335
 Ala Lys Asp Tyr Thr Leu Tyr Thr Thr Leu Gly Thr Lys Trp Leu Thr
 340 345 350
 Pro Asp Met Pro Met Asn Tyr Tyr Phe Asp Lys Lys Glu Gln Lys
 355 360 365
 Met Tyr Thr Leu Lys Asn Glu Thr Gly Trp Ala Val Leu Lys Asp Ile
 370 375 380
 Cys Asn Val Gln Arg Thr Arg Thr Thr Asn Thr Pro Gly Ile Gly Ile
 385 390 395 400
 Gly Tyr Tyr Trp Pro Ser Thr Met Lys Gly Glu Ser Met Gln Ala Glu
 405 410 415
 Lys Glu Gln Phe Asp Ser Arg Phe Arg Ala Ile Met Asp Ser Ile Pro
 420 425 430
 Glu Glu Gly Asn Pro Val Leu Gln Ile Met Asn Phe Asn Lys
 435 440 445

<210> 5281

<211> 89

<212> PRT

<213> B.fragilis

<400> 5281

Leu Gln Leu Arg Val Ser Val Phe Val Leu His Arg Met Thr Thr Ile
 1 5 10 15
 Asp Ile Ile Ile Leu Ile Ala Leu Gly Ala Gly Val Ile Val Gly Phe
 20 25 30
 Met Lys Gly Phe Ile Arg Gln Leu Ala Ser Ile Leu Gly Leu Ile Val
 35 40 45
 Gly Leu Leu Ala Ala Lys Ala Phe Val His Leu Thr Gly Cys Glu Val
 50 55 60
 Met Pro Tyr Gly Asp Arg Leu His Asp Cys Gly Ala Asp Thr Gly Ile
 65 70 75 80
 Tyr His Tyr Leu Asp Arg Cys Gly Arg
 85

<210> 5282

<211> 456

<212> PRT

<213> B.fragilis

<400> 5282

Glu Gly Ile Arg Arg Met Ser Leu Ile Met Asn Ala Glu Gln Gln Tyr
 1 5 10 15
 Ile Asp Leu Phe Ser Gln Cys Glu Ala Met Ile Cys Arg His Ser Ala
 20 25 30
 Glu Ala Leu Asn Ala Pro Arg Ala Thr Ala Phe Ala Asp Phe Glu Arg
 35 40 45
 Gln Gly Phe Pro Thr Arg Lys Gln Glu Lys Tyr Lys Tyr Thr Asp Val
 50 55 60
 Ser Lys Phe Phe Glu Pro Asp Tyr Gly Leu Asn Leu Asn Arg Leu Pro
 65 70 75 80
 Ile Pro Val Asn Pro Tyr Glu Val Phe Lys Cys Asp Val Pro Asn Met
 85 90 95
 Ser Thr Ser Leu Phe Phe Val Val Asn Asp Ala Phe Tyr Asn Gln Val
 100 105 110
 Leu Pro Lys Ser Gly Leu Pro Glu Gly Val Ile Phe Gly Ser Leu Arg
 115 120 125
 Asn Met Ala Glu Gln His Pro Glu Leu Val Lys Lys Tyr Tyr Gly Lys
 130 135 140
 Leu Ala Asp Thr Ser Lys Asp Ala Val Thr Ala Phe Asn Thr Ala Phe
 145 150 155 160
 Ala Gln Asp Gly Val Leu Met Tyr Val Pro Lys Asn Val Ile Val Asp
 165 170 175
 Arg Pro Ile Gln Leu Val Asn Ile Leu Arg Ala Asp Val Asn Phe Met
 180 185 190
 Val Asn Arg Arg Val Leu Ile Ile Leu Glu Glu Gly Ala Gln Ala Arg
 195 200 205
 Leu Leu Ile Cys Asp His Ala Met Asp Asn Val Asn Phe Leu Ala Thr
 210 215 220
 Gln Val Ile Glu Val Phe Ala Glu Glu Asn Ser Val Phe Asp Leu Tyr
 225 230 235 240
 Glu Leu Glu Glu Thr His Thr Ser Thr Val Arg Phe Ser Asn Leu Tyr
 245 250 255
 Val Lys Gln Gly Ala Asn Ser Asn Val Leu Leu Asn Gly Met Thr Leu
 260 265 270
 His Asn Gly Thr Thr Arg Asn Thr Thr Glu Val Thr Leu Ala Gly Glu
 275 280 285
 Gly Ala Glu Ile Asn Leu Cys Gly Met Ala Ile Ala Asp Lys Asn Gln
 290 295 300
 His Val Asp Asn Asn Thr Ser Ile Asp His Ala Val Pro Asn Cys Thr
 305 310 315 320
 Ser Asn Glu Leu Phe Lys Tyr Val Leu Asp Asp Gln Ser Val Gly Ala
 325 330 335
 Phe Ala Gly Leu Val Leu Val Arg Pro Asp Ala Gln His Thr Ser Ser
 340 345 350
 Gln Gln Thr Asn Arg Asn Leu Cys Ala Thr Arg Asp Ala Arg Met Tyr
 355 360 365
 Thr Gln Pro Gln Leu Glu Ile Tyr Ala Asp Asp Val Lys Cys Ser His
 370 375 380
 Gly Ala Thr Val Gly Gln Leu Asp Glu Asn Ala Leu Phe Tyr Met Arg
 385 390 395 400
 Ala Arg Gly Ile Ala Glu Lys Glu Ala Arg Leu Leu Leu Met Phe Ala
 405 410 415
 Phe Val Asn Glu Val Ile Asp Thr Ile Arg Leu Lys Ala Leu Lys Asp
 420 425 430
 Arg Leu His Leu Leu Val Glu Lys Arg Phe Arg Gly Glu Leu Asn Lys
 435 440 445
 Cys Gln Gly Cys Ser Ile Cys Lys
 450 455

<210> 5283
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 5283

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Arg Gln Cys Arg Ile Met Lys Thr Lys Arg Val Gly Trp Leu Leu Ile
1      5      10      15
Phe Leu Ser Tyr Val Gly Val Val Leu Ala Gln Asn Leu Asp Asp Gln
      20      25      30
Glu Arg Arg Trp Ala Ile Ser Gly Ser Trp Gly Gly Asn Trp Pro Ile
      35      40      45
Val Thr Lys Asn Thr Leu Ser Gly Lys Ala Val Ser Ala Gly His Ile
      50      55      60
His Thr Leu Met Leu Glu Tyr Tyr Ile Pro Tyr Thr Arg Phe Ser Leu
      65      70      75      80
Lys Gly Gly Tyr Thr Gly Glu Glu Ile Gly Leu Asn Pro Gly Ile Ser
      85      90      95
Ala Ser Met Ser Asn Leu Glu Ile Gly Gly Arg Tyr Tyr Phe Leu Pro
      100      105      110
Gln Arg Phe Ala Ile Gln Pro Tyr Gly Gly Leu Ser Thr Gly Trp Asn
      115      120      125
Leu Ser Pro Arg Arg Gln Glu Gly Met Gly Ser Ser Ser Tyr Tyr Asp
      130      135      140
Pro Ser Arg Gln Glu Phe Arg Lys Asp Tyr Asp Tyr Arg Tyr Arg Ile
      145      150      155      160
Lys Glu Pro Leu Phe Thr Val Ser Pro Val Val Gly Ala Asp Ile Tyr
      165      170      175
Phe Leu Ser Cys Leu Ala Leu Thr Leu Glu Tyr Asn Phe Arg Met Gly
      180      185      190
Ile Ala Gly Lys Ile Ser Gly Glu Ile Glu Lys Thr Asn Ser Arg Gly
      195      200      205
Thr Gly Phe Val Arg Ser Asn Gly Met Arg Gln Thr Val Ser Val Gly
      210      215      220
Val Lys Val Asn Phe Pro Phe Thr Ile Thr Gln Thr Asp Gly Asn Ser
      225      230      235      240
Ile Leu Gln Trp Leu Asp Glu Val Ile Phe Gly Lys Glu
      245      250

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<210> 5284
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 5284

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Glu Asp Gly Gly Gly Ser Ser Met Asp Thr Ala Lys Ala Ile Gly Ile
1      5      10      15
Ile Thr Asn Asn Pro Glu Phe Ser Asp Val Val Ser Leu Glu Gly Val
      20      25      30
Ala Asp Thr Lys Lys Lys Ser Val Pro Ile Ile Ala Leu Pro Thr Thr
      35      40      45
Ala Gly Thr Ala Ala Glu Val Thr Ile Asn Tyr Val Ile Thr Asp Glu
      50      55      60
Lys Asn Gln Lys Lys Met Val Cys Val Asp Pro Asn Asp Ile Pro Ser
      65      70      75      80
Ile Ala Ile Val Asp Ala Glu Leu Met Tyr Thr Leu Pro Lys Ser Leu
      85      90      95
Thr Ala Ala Thr Gly Leu Asp Ala Leu Thr His Ala Ile Glu Gly Leu

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210

215

<210> 5286

<211> 388

<212> PRT

<213> B.fragilis

<400> 5286

Cys Asn Pro Ile Lys Ile Met Arg Lys Asn Lys Phe Lys Ser Phe Ala
 1 5 10 15
 Ser Arg Leu Asn Lys Asp Gly Asp His Pro Glu Lys Ile Ser Phe Glu
 20 25 30
 Ser Pro Glu Glu Gln Ala Glu Tyr Asp Lys Leu Asp Phe Leu Trp Asn
 35 40 45
 Arg Cys Leu Pro Glu Glu Thr Gly Glu Pro Asp Ile Trp Ala Lys Val
 50 55 60
 Gln Ala Lys Ile Asn Ala Asp Asn Thr Pro Val Arg Leu Ala Leu Lys
 65 70 75 80
 Ser Asn Lys Thr Ala Arg Leu Phe Ser Ile Leu Lys Tyr Ser Ala Val
 85 90 95
 Ala Ala Ser Val Ala Leu Leu Ile Gly Ala Gly Cys Phe Leu Leu Leu
 100 105 110
 Asn Asp Glu Glu Arg His Asp Leu Asn Lys Ile Ala Gln Ser Leu Gln
 115 120 125
 Thr Glu Ile Pro Gln Asp Ile Lys Glu Val Thr Leu Val Val Ser Asp
 130 135 140
 Gln Lys Lys Ile Glu Leu Asp Asn Asn Ala Gln Ile Val Tyr Ser Ala
 145 150 155 160
 Thr Gly Gln Val Gln Val Asn Ser Asn Lys Leu Val Glu Asp Asp Ile
 165 170 175
 Lys Glu Glu Tyr Asn Gln Ile Ile Val Pro Lys Gly Lys Arg Ser Gln
 180 185 190
 Ile Val Leu Ala Asp Asn Ser Lys Ile Trp Ile Asn Ser Gly Ser Lys
 195 200 205
 Val Ile Tyr Pro Arg Ala Phe Glu Gly Lys Tyr Arg Glu Ile Tyr Val
 210 215 220
 Glu Gly Glu Val Tyr Leu Asn Val Thr His Asp Thr Ser Lys Pro Phe
 225 230 235 240
 Ile Val Asn Thr Ser Gly Phe Glu Val Arg Val Leu Gly Thr Ser Phe
 245 250 255
 Asn Ile Ser Ala Tyr Lys Asn Gln Glu Lys Ala Ala Val Val Leu Val
 260 265 270
 Glu Gly Ser Val Asn Val Lys Asp Gln Gln Asn His His Ile Lys Met
 275 280 285
 Val Pro Asn Glu Lys Val Glu Leu Asn Gln Glu Gly Ile Ser Gly Lys
 290 295 300
 Glu Lys Val Asn Ala Arg Asp Tyr Ile Ser Trp Ile Asp Gly Ile Trp
 305 310 315 320
 Thr Leu Gln Gly Glu Ser Leu Lys Gln Val Leu Leu Arg Leu Gln Asn
 325 330 335
 Tyr Tyr Gly Gln Asn Ile Arg Cys Asp Ala Ala Ile Glu Asn Glu Gln
 340 345 350
 Met Phe Gly Lys Leu Phe Leu Asn Asp Asp Leu Asn Gln Val Met Lys
 355 360 365
 Ser Ile Leu Ser Ile Leu Pro Ala Glu Tyr Thr Met Lys Asn Asn Val
 370 375 380
 Ile Tyr Ile Glu
 385

<210> 5287
 <211> 488
 <212> PRT
 <213> B.fragilis

<400> 5287

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Leu Gly Gly Ile Cys Ile Gly Lys Glu Asn Lys Ile Asp Asn Asp Tyr
1      5      10      15
Gln Leu Met Ser Thr Tyr Leu Ala Ala Asp Phe Gly Gly Gly Ser Gly
      20      25      30
Arg Ile Met Ala Gly Thr Leu Thr Glu Gly Lys Leu Lys Leu Glu Glu
      35      40      45
Val Tyr Arg Phe Ala Asn Arg Gln Ile Lys Leu Gly Asn Cys Val Tyr
      50      55      60
Trp Asp Phe Leu Ser Leu Phe Glu Glu Met Lys Asn Gly Leu Arg Val
      65      70      75      80
Ala Ala Arg Lys Gly Tyr Glu Val Lys Ser Met Ala Ile Asp Thr Trp
      85      90      95
Gly Val Asp Phe Gly Leu Ile Asp Lys Asp Gly Lys Leu Leu Gly Asn
      100     105     110
Pro Val Cys Tyr Arg Asp Ser Arg Thr Asp Gly Ile Pro Glu Arg Val
      115     120     125
Phe Lys Gln Ile Asp Gln Thr Val His Tyr Ala Glu Ile Gly Ile Gln
      130     135     140
Val Met Pro Ile Asn Thr Leu Phe Gln Leu Tyr Ser Met Lys Gln Asn
      145     150     155     160
Asp Asp Val Gln Leu Arg Val Ala Asp Lys Leu Leu Phe Met Pro Asp
      165     170     175
Leu Phe Ser Tyr Phe Leu Thr Gly Val Ala Asn Asn Glu Tyr Cys Ile
      180     185     190
Ala Ser Thr Ser Glu Leu Leu Asp Ala Arg Gln Arg Asn Trp Ser Asp
      195     200     205
Asn Leu Ile Ser Glu Leu Gly Leu Pro Arg Gln Leu Phe Gly Glu Ile
      210     215     220
Val Phe Pro Gly Thr Val Arg Gly Lys Leu Lys Gln Glu Ile Ala Asp
      225     230     235     240
Glu Thr Gly Leu Gly Cys Ile Asn Val Val Ala Val Gly Ser His Asp
      245     250     255
Thr Ala Ser Ala Val Phe Ala Val Pro Ser Asn Glu Pro Asn Arg Ala
      260     265     270
Tyr Leu Ser Ser Gly Thr Trp Ser Leu Leu Gly Ala Glu Val Asp Gln
      275     280     285
Pro Ile Leu Thr Glu Glu Ala Arg Val Ala Gly Phe Thr Asn Glu Gly
      290     295     300
Gly Ile Gln Gly Lys Ile Arg Phe Leu Gln Asn Ile Thr Gly Leu Trp
      305     310     315     320
Ile Leu Gln Arg Leu Met Ala Glu Trp Lys Glu Gln Gly Lys Glu Ile
      325     330     335
Ser Tyr Asp Cys Ala Ile Ala Glu Ala Thr Val Ser Asp Ile Arg Ser
      340     345     350
Val Ile Asp Val Asp Asp Ser Ala Phe Cys Asn Pro Asp His Met Glu
      355     360     365
Glu Ser Ile Ile Lys Tyr Cys His Lys His His Leu Arg Thr Pro Val
      370     375     380
Ser Gln Gly Glu Phe Val Arg Cys Val Ile Glu Ser Leu Ala Tyr Arg
      385     390     395     400
Tyr Lys Leu Gly Val Glu Gln Met Asn Arg Cys Leu Pro Ala Pro Val
      405     410     415
Lys Gln Leu His Ile Ile Gly Gly Gly Cys Gln Asn Arg Leu Leu Asn

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Asn Val Ile Val Lys Gly Asp Val Asp Gly Ser Ile Glu Ala Leu Ser
      820      825      830
Asp Ser Leu Ile Lys Leu Ser Thr Glu Gln Ile Gln Val Asn Val Ile
      835      840      845
His Lys Ala Val Gly Gln Ile Ser Glu Ser Asp Val Thr Leu Ala Ala
      850      855      860
Ala Ser Asp Ala Ile Ile Ile Gly Phe Gln Val Arg Pro Ser Ala Ser
      865      870      875      880
Ala Arg Lys Phe Ala Glu Gln Glu Gly Val Asp Ile Arg Leu Tyr Ser
      885      890      895
Val Ile Tyr Ala Ala Ile Glu Glu Val Lys Ala Ala Met Glu Gly Met
      900      905      910
Leu Ala Pro Glu Val Lys Glu Val Val Thr Ala Thr Ile Glu Val Arg
      915      920      925
Glu Val Phe His Ile Thr Lys Val Gly Thr Val Ala Gly Ala Val Val
      930      935      940
Lys Glu Gly Lys Val Lys Arg Ser Asp Lys Ala Arg Leu Ile Arg Asp
      945      950      955      960
Gly Ile Val Ile Phe Ser Gly Ser Ile Asn Ala Leu Lys Arg Phe Lys
      965      970      975
Asp Asp Val Lys Glu Val Gly Thr Asn Phe Glu Cys Gly Ile Ser Leu
      980      985      990
Val Asn Tyr Asn Asp Leu Lys Val Gly Asp Met Ile Glu Thr Tyr Glu
      995      1000      1005
Glu Val Glu Val Lys Gln Thr Leu
      1010      1015

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<210> 5289

<211> 416

<212> PRT

<213> B.fragilis

<400> 5289

```

Val Pro Gly Met Phe Tyr Leu Gln Ile Ile Ser Asp Lys Met Asn Ile
1      5      10      15
His Lys Ile Arg Glu Asp Phe Pro Ile Leu Ser Arg Thr Val Tyr Gly
      20      25      30
Lys Pro Leu Val Tyr Leu Asp Asn Gly Ala Thr Thr Gln Lys Pro Arg
      35      40      45
Leu Val Ile Asp Ser Ile Val Asp Glu Tyr Tyr Ser Val Asn Ala Asn
      50      55      60
Val His Arg Gly Val His Phe Leu Ser Gln Gln Ala Thr Glu Leu His
      65      70      75      80
Glu Ala Ser Arg Glu Thr Val Arg Gln Phe Ile Asn Ala Arg Ser Thr
      85      90      95
Arg Glu Val Ile Phe Thr Arg Gly Thr Thr Glu Ser Ile Asn Leu Ile
      100      105      110
Val Ser Ser Phe Gly Glu Glu Phe Met Gln Glu Gly Asp Glu Val Ile
      115      120      125
Val Ser Val Met Glu His His Ser Asn Ile Val Pro Trp Gln Leu Leu
      130      135      140
Ala Ala Arg Lys Gly Ile Ala Ile Lys Val Ile Pro Met Asn Asp Lys
      145      150      155      160
Gly Glu Leu Leu Leu Glu Glu Tyr Glu Asn Leu Phe Ser Glu Arg Thr
      165      170      175
Lys Ile Val Ser Val Ala Gln Val Ser Asn Val Leu Gly Thr Ile Asn
      180      185      190
Pro Val Lys Glu Met Ile Ala Thr Ala His Ala His Gly Val Pro Val
      195      200      205

```

Met Ile Asp Gly Ala Gln Ser Ile Pro His Met Lys Val Asp Val Gln
 210 215 220
 Asp Leu Asp Ala Asp Phe Val Phe Ser Gly His Lys Ile Tyr Gly
 225 230 235 240
 Pro Thr Gly Ile Gly Val Leu Tyr Gly Lys Glu Asp Trp Leu Glu Arg
 245 250 255
 Leu Pro Pro Tyr Gln Gly Gly Gly Glu Met Ile Gln Ser Val Ser Phe
 260 265 270
 Glu Lys Thr Val Phe Gly Glu Leu Pro Phe Lys Phe Glu Ala Gly Thr
 275 280 285
 Pro Asp Tyr Ile Ala Thr Thr Gly Leu Ala Lys Ala Leu Asp Tyr Val
 290 295 300
 Thr Gly Ile Gly Leu Asp Pro Ile Ala Leu His Glu His Glu Leu Thr
 305 310 315 320
 Val Tyr Ala Met Gln Arg Leu Lys Glu Ile Pro Asn Met Arg Ile Phe
 325 330 335
 Gly Glu Ala Glu His Lys Ser Ser Val Ile Ser Phe Leu Val Gly Asp
 340 345 350
 Ile His His Leu Asp Leu Gly Thr Leu Leu Asp Arg Leu Gly Ile Ala
 355 360 365
 Val Arg Thr Gly His His Cys Ala Glu Pro Leu Met Arg Arg Leu Gly
 370 375 380
 Ile Glu Gly Thr Val Arg Ala Ser Phe Ala Val Tyr Asn Thr Lys Glu
 385 390 395 400
 Glu Val Asp Ala Leu Val Ala Gly Ile Glu Arg Val Ser Lys Met Phe
 405 410 415

<210> 5290
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 5290
 Ala Arg Phe Val Cys Thr Phe Ile Leu Arg Tyr Leu Asn Pro Gly Met
 1 5 10 15
 Leu Leu Lys Ile Leu Ala Ile Ala Gly Gly Ala Phe Thr Leu Gly Val
 20 25 30
 Ile Phe Leu Gln Asp Ile Trp Gly Leu Tyr Cys Leu Val Ala Val Ser
 35 40 45
 Ala Cys Met Ser Leu Met Phe Pro Thr Ile Tyr Gly His Cys Ser Ser
 50 55 60
 Trp Phe Gly
 65

<210> 5291
 <211> 695
 <212> PRT
 <213> B.fragilis

<400> 5291
 Tyr Gln Lys Ser Asn Cys Met Asn Glu Arg Ile Asn Tyr Leu Lys Thr
 1 5 10 15
 Tyr Ile Leu Asp Lys Arg His His Ser Gln Arg Arg Thr Pro Ser Ser
 20 25 30
 Ile Gly Leu Asp Lys Leu Asn Thr Ile Tyr Ala Gln Gln Gly Leu Ser
 35 40 45
 Pro Val Glu Arg Thr Thr Ala Cys Phe Ala Ala Leu Met Asn Ala Glu
 50 55 60
 Leu Pro Val Ile Leu Pro Gly Glu Lys Ile Val Phe Thr Arg Thr Leu

65					70					75				80	
Thr	Gln	Val	Pro	Asp	Ile	Tyr	Thr	Pro	Glu	Glu	Trp	Asn	Glu	Ile	Lys
				85					90					95	
Asn	Lys	Tyr	Tyr	Ile	His	Glu	Lys	Gly	Thr	Val	Cys	Asn	Ile	Ser	Pro
			100					105					110		
Asn	Tyr	Ala	Tyr	Thr	Ile	Gln	His	Gly	Leu	Glu	Ala	Arg	Lys	Gln	Glu
		115					120					125			
Ile	Arg	Lys	Arg	Gln	Glu	Asn	Pro	Ser	Leu	Asn	Glu	Arg	Glu	Arg	Val
	130					135					140				
Phe	Leu	Asn	Ser	Met	Tyr	Gln	Cys	Ile	Ile	Ser	Leu	Gln	Lys	Leu	Ile
145					150					155					160
Glu	Lys	Tyr	Glu	Gln	Tyr	Ala	Leu	Leu	Asn	Asn	Glu	Thr	Glu	Ile	Ala
				165					170					175	
His	Thr	Leu	His	Thr	Ile	Lys	Thr	Glu	Gly	Ala	Gln	Asn	Phe	Arg	Gln
		180						185					190		
Ala	Leu	Gln	Leu	Leu	Arg	Ile	Leu	His	Phe	Ser	Ile	Trp	Glu	Ala	Gly
	195						200					205			
Asn	Tyr	His	Asn	Thr	Leu	Gly	Arg	Phe	Asp	Gln	Tyr	Met	Tyr	Pro	Phe
210						215					220				
Tyr	Gln	Arg	Asp	Leu	Glu	Asn	Gly	Thr	Leu	Thr	Lys	Glu	Glu	Ala	Phe
225					230					235					240
Asp	Leu	Leu	Glu	Glu	Phe	Phe	Leu	Val	Cys	Asn	Lys	Asp	Ser	Asp	Leu
			245						250					255	
Tyr	Pro	Gly	Met	Gln	Gln	Gly	Asp	Asn	Gly	Gln	Ser	Leu	Val	Leu	Gly
		260					265						270		
Gly	Arg	Asp	Pro	Glu	Gly	Lys	Tyr	Leu	Phe	Asn	Asp	Leu	Ser	Arg	Met
		275					280					285			
Cys	Leu	Gln	Ala	Ser	Tyr	Glu	Leu	Lys	Leu	Ile	Asp	Pro	Lys	Ile	Asn
	290					295				300					
Ile	Arg	Val	Ala	Pro	Lys	Thr	Pro	Asp	Glu	Ile	Phe	Thr	Leu	Gly	Ser
305					310					315					320
Arg	Leu	Thr	Lys	Ile	Gly	Leu	Gly	Phe	Pro	Gln	Tyr	Ser	Asn	Asp	Asp
			325						330					335	
Ile	Ile	Ile	Pro	Gly	Leu	Ile	Arg	Lys	Gly	Tyr	Ser	Lys	Glu	Asp	Ala
		340						345					350		
Tyr	Asn	Tyr	Val	Val	Ala	Ala	Cys	Trp	Glu	Phe	Ile	Ile	Pro	Asn	Arg
	355						360					365			
Ala	Met	Asp	Ile	Pro	Asn	Ile	Asp	Ala	Val	Ser	Leu	Ile	Gly	Cys	Val
	370					375					380				
Asp	Arg	Cys	Leu	Glu	Lys	Leu	Asn	Thr	Cys	Ser	Asn	Tyr	Ser	Ser	Phe
385					390					395					400
Tyr	Thr	Leu	Val	Glu	Gln	Glu	Ile	Gln	Lys	Glu	Val	Asn	Ala	Ile	Cys
			405						410					415	
Glu	Lys	His	Arg	Asn	Leu	Tyr	Ile	Ile	Pro	Ser	Pro	Met	Met	Ser	Leu
		420					425						430		
Leu	Met	Asp	Gly	Thr	Ile	Glu	Arg	Ala	Lys	Asp	Ile	Ser	Glu	Gly	Ser
	435						440					445			
Tyr	Tyr	Asn	Asn	Tyr	Gly	Ile	His	Gly	Thr	Gly	Ile	Ala	Thr	Ala	Thr
450					455						460				
Asp	Thr	Leu	Ala	Ala	Leu	Lys	Lys	Tyr	Tyr	Phe	Glu	Glu	Gln	Ser	Leu
465					470					475					480
Asp	Tyr	Thr	Thr	Leu	Leu	Thr	Ala	Ile	Arg	Ser	Asn	Phe	Lys	Gly	Tyr
			485						490					495	
Glu	Glu	Leu	Gln	Lys	Lys	Leu	Arg	Glu	Glu	Ala	Pro	Lys	Met	Gly	Gln
			500					505					510		
Asp	Asn	Asp	Tyr	Ala	Asp	Leu	Ile	Ala	Lys	Asp	Leu	Leu	Asp	Ser	Phe
	515						520					525			
Asp	Arg	Ser	Leu	Ala	Asp	Lys	Arg	Asn	Glu	Arg	Gly	Gly	Val	Tyr	Arg
	530					535					540				

Ala Gly Thr Gly Thr Ala Met Tyr Tyr Ile Phe His Ser Asn Gln Leu
 545 550 555 560
 Arg Ala Thr Pro Asp Gly Arg Asn Asp Gly Glu Met Ile Pro Ala Asn
 565 570 575
 Tyr Ser Pro Ser Leu Phe Leu Lys Gln Lys Gly Pro Ile Ser Val Ile
 580 585 590
 Lys Ser Phe Thr Lys Gln His Leu Asp Arg Val Val Asn Gly Gly Pro
 595 600 605
 Leu Thr Leu Glu Phe Asp Gln Ser Val Phe Ser Asn Asp Glu Thr Ile
 610 615 620
 Glu Lys Leu Gly Met Leu Val Lys Thr Tyr Ile Val Leu Gly Gly His
 625 630 635 640
 Gln Leu Gln Leu Asn Thr Val Ser Arg Glu Thr Leu Leu His Ala Arg
 645 650 655
 Lys His Pro Glu Gln His Lys Asn Leu Ile Val Arg Val Trp Gly Trp
 660 665 670
 Ser Gly Tyr Phe Val Glu Leu Asp Glu Cys Tyr Gln Asn His Val Ile
 675 680 685
 Asn Arg Ile Glu Phe Gly Leu
 690 695

<210> 5292

<211> 694

<212> PRT

<213> B.fragilis

<400> 5292

Asn Gln Cys Thr Met Lys Thr Thr Lys His Leu Ser Val Ala Ala Val
 1 5 10 15
 Leu Thr Val Leu Met Gln Met Gly Cys Gln Ser His Thr Asp Asn Thr
 20 25 30
 Arg Gln Thr Leu His Leu Pro Glu Leu Asn Glu Val Arg Ile Glu Asp
 35 40 45
 Ala Phe Trp Ser Pro Lys Leu Asp Ile Trp Arg Lys Ile Thr Ala Asn
 50 55 60
 Asp Val Leu Asn Lys Phe Glu Gly Lys Tyr Thr Pro Phe Pro Gly Ser
 65 70 75 80
 Thr Asp Thr Arg Asn Ala Phe Arg Asn Phe Asp Arg Val Ala Glu Gly
 85 90 95
 Gln Arg Asp Ile Lys Gln His Asp Gly Pro Glu Trp Tyr Asp Gly Leu
 100 105 110
 Val Tyr Glu Ser Ile Arg Gly Ile Ala Tyr Phe Leu Ala Ser His Pro
 115 120 125
 Asn Lys Glu Leu Glu Lys Arg Ile Asp Gly Tyr Val Asp Arg Ile Tyr
 130 135 140
 Ala Ala Gln Gln Thr Glu Pro Thr Gly Tyr Ile Asn Thr His Thr Gln
 145 150 155 160
 Leu Met Glu Asn Asn His Arg Trp Gly Asp Asn Gly Gly Leu Leu Arg
 165 170 175
 Gly Gln His Asp Val Tyr Asn Ala Gly Met Leu Ile Glu Ala Gly Val
 180 185 190
 His Tyr Tyr Gln Ala Thr Gly Lys Thr Arg Leu Leu Glu Ile Ala Thr
 195 200 205
 Arg Phe Ala Asn Tyr Met Ala Asp Tyr Met Gly Pro Glu Pro Arg Lys
 210 215 220
 Asn Ile Val Pro Ala His Ser Gly Pro Glu Glu Ala Val Met Ala Leu
 225 230 235 240
 Tyr Trp Leu Tyr Lys Asn Glu Pro Glu Leu Lys Asp Lys Leu Ser Ile
 245 250 255

Pro Val Arg Glu Ser Asp Tyr Tyr Asn Leu Ala Thr Phe Trp Ile Glu
 260 265 270
 Asn Arg Gly His His Cys Gly Phe Pro Leu Trp Gly Thr Trp Gly Tyr
 275 280 285
 Arg Lys Ser Glu Lys Trp Ile Lys Asp Ala Cys Tyr His Gln Ala Glu
 290 295 300
 Phe Gly Thr His Ser Arg Pro Ser Trp Gly Glu Tyr Ser Gln Asp Ser
 305 310 315 320
 Ile Pro Val Leu Glu Gln Lys Thr Ile Glu Gly His Ala Val Arg Ala
 325 330 335
 Thr Leu Met Ala Thr Gly Leu Thr Ala Ala Ala Leu Glu Asn Gln Ser
 340 345 350
 Pro Gln Tyr Ile Glu Thr Ala Lys Arg Leu Trp Glu Asn Met Ala Gly
 355 360 365
 Lys Arg Met Phe Ile Thr Gly Gly Val Gly Ala Ile His Glu Asp Glu
 370 375 380
 Lys Phe Gly Pro Asp Tyr Phe Leu Pro Thr Asp Ala Tyr Leu Glu Thr
 385 390 395 400
 Cys Ala Ala Val Gly Ala Gly Phe Phe Ser Gln Arg Met Asn Gln Leu
 405 410 415
 Thr Cys Asn Ala Arg Tyr Met Asp Glu Val Glu Arg Val Leu Tyr Asn
 420 425 430
 Asn Val Leu Thr Gly Val Ser Leu Ser Gly Asp Lys Tyr Thr Tyr Gln
 435 440 445
 Asn Pro Leu Asn Thr Asp Lys Pro Asp Arg Trp Glu Trp His Val Cys
 450 455 460
 Pro Cys Cys Pro Pro Met Phe Leu Lys Ile Met Ala Ala Met Pro Gly
 465 470 475 480
 Tyr Ile Tyr Ala Tyr Gln Gly Asp Asn Val Tyr Val Asn Leu Phe Ile
 485 490 495
 Gly Ser Glu Val Arg Ile Pro Val Gly Asp Asn Ser Val Arg Leu Lys
 500 505 510
 Gln Leu Thr Ser Tyr Pro Trp His Gly Ala Val Ser Ile Gln Val Asn
 515 520 525
 Pro Asp Lys Ala Ser Thr Phe Ser Met Lys Val Arg Ile Pro Gly Trp
 530 535 540
 Ala Gln Gly Thr Glu Asn Pro Tyr Asp Leu Tyr Gln Ser Asn Leu Lys
 545 550 555 560
 Ala Pro Val Lys Leu Lys Val Asn Gln Glu Asp Val Leu Leu Arg Ile
 565 570 575
 Val Asp Gly Tyr Ala Glu Ile Asn Arg Glu Trp Lys Lys Gly Asp His
 580 585 590
 Ile Glu Leu Glu Leu Pro Met Gln Pro Arg Leu Ile Thr Ala Asn Lys
 595 600 605
 Ala Val Glu Asn Leu Arg Gly Gln Val Ala Leu Ala Ser Gly Pro Ile
 610 615 620
 Ile Tyr Cys Phe Glu Asp Ala Asp Asn Pro Glu Leu Gln Thr Phe Lys
 625 630 635 640
 Leu Gln Ala Gln Thr Pro Leu Glu Leu Ser His Asp Ser Asn Leu Leu
 645 650 655
 Asn Gly Val Asn Ile Ile Lys Cys Gln Gly Asp Ile Pro Ala Lys Ala
 660 665 670
 Ile Pro Tyr Ala Val Ala Asn Arg Glu Glu Ser His Ser Tyr Lys
 675 680 685
 Val Trp Ile Pro Gln Lys
 690

<210> 5293

<211> 260

<212> PRT

<213> B.fragilis

<400> 5293

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Lys Asn Ile Ala Ala Phe Gly Ile Ser Leu Arg Leu Lys Asp Ile Lys
1      5      10      15
Asp Leu Thr Met Gln Lys Phe Arg Leu Thr Met Leu Phe Ile Ile Cys
      20      25      30
Gly Asn Gly Phe Ala Tyr Ala Gln Thr Phe Asn Glu Thr Pro Ile Pro
      35      40      45
Ala Phe Thr Leu His Lys Glu Met Lys Thr Pro Gln Ile Phe Lys Leu
      50      55      60
Pro Glu Ile Lys Asn Thr Leu Ser Glu Thr Asn Pro Ala Phe Asn Asn
65      70      75      80
Ser Met Pro Leu Val Lys Gln Tyr Glu Leu Arg Lys Lys Phe Ser Tyr
      85      90      95
Leu Asp Pro Val Phe Thr Gly Tyr Phe Asn Gln Gln Gln Tyr Arg Leu
      100     105     110
Phe Asn Ser Arg Tyr Phe Gly Tyr Glu Leu Tyr Gly Ser Ser Tyr Ser
      115     120     125
Leu Arg Gly Val Gly Thr Gln Asn Met Ala Gly Gly Arg Leu Val Tyr
      130     135     140
Arg Leu Asn Arg Gln Leu Ala Ile Arg Ile Gly Gly Asn Ala Tyr Gln
145     150     155     160
Tyr Arg Ser Asn Gly Arg Met Phe Asn Asp Phe Thr Leu Asn Ala Asp
      165     170     175
Leu Thr Tyr Arg Leu Asn Asn Trp Leu Thr Ala Tyr Ile Tyr Gly Gln
      180     185     190
Tyr Arg Leu Asp Cys Asn Pro Asn Ser Gly Val Gln Gly Phe Pro Leu
      195     200     205
Ser Pro Gln Ser His Tyr Gly Ala Ser Phe Arg Ile Asn Leu Leu Glu
      210     215     220
Arg Lys Glu Tyr Gly Leu Asp Leu Asn Leu Gly Thr Asp Arg Ser Tyr
225     230     235     240
Asn Ala Ala Thr Arg Gln Trp Glu Asn Thr Tyr Lys Ile Gly Pro Thr
      245     250     255
Ile Arg Leu Lys
      260

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<210> 5294

<211> 263

<212> PRT

<213> B.fragilis

<400> 5294

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Asn Ile Met Tyr Ile Phe Ala Ile Val Asn Pro Asn Thr Met Lys Thr
1      5      10      15
Gly Thr Ile Phe Ser Val Glu Glu Phe Ala Ile His Asp Gly Pro Gly
      20      25      30
Ile Arg Thr Thr Ile Phe Leu Lys Gly Cys Pro Leu Arg Cys Ala Trp
      35      40      45
Cys His Asn Pro Glu Gly Ile Ser Pro Gln Pro Gln Tyr Met Ile Lys
      50      55      60
Lys Gly Val Lys Ser Ile Cys Gly Tyr Gln Ile Thr Val Glu Glu Leu
65      70      75      80
Val Thr Met Ile Glu Lys Asn Arg Ser Ile Tyr Thr Leu Asn Arg Gly
      85      90      95
Gly Val Thr Leu Thr Gly Gly Glu Pro Leu Phe Gln Pro Asp Phe Val
      100     105     110

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      115              120              125
Lys Lys Lys Gln Lys Leu Arg Gly Tyr Asn Gln Ser Glu Trp Ile Ala
    130              135              140
Arg Gly Ile Ser Ser Val Thr Gly Ile Pro Leu Asn Ala Lys Ser Val
145              150              155              160
Ile Arg Glu Lys Asn Thr Glu Thr Gln Thr Arg Lys Ser Thr Phe Glu
      165              170              175
Arg Ser Glu Asn Val Asp Gly Ile Phe Lys Leu Cys Asp Val Ala Cys
      180              185              190
Phe Gln Gly Lys His Val Leu Ile Ile Asp Asp Val Leu Thr Thr Gly
      195              200              205
Ser Thr Thr Val Ala Cys Ala Ser Thr Leu Phe Glu Val Glu Gly Val
      210              215              220
Arg Ile Ser Val Leu Thr Leu Ala Val Ala Glu
225              230              235

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<210> 5297

<211> 88

<212> PRT

<213> B.fragilis

<400> 5297

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Ile Leu Phe Lys Arg Met Lys Ile Thr Ser Tyr Val Ser Phe Leu Tyr
1              5              10              15
Cys Leu Cys Leu Met Leu Ala Ser Pro Thr Val Gln Ala Ser Glu Val
      20              25              30
Arg Thr Ala Ile Phe Glu Gly Lys Pro Cys Ile Asn Pro Pro His Val
      35              40              45
Val Gly Asn Tyr Pro Ala Thr Pro Phe Leu Phe Tyr Ile Pro Thr Ser
      50              55              60
Gly Glu Arg Pro Ile Lys Trp His Ala Glu Asn Leu Pro Lys Gly Leu
65              70              75              80
Lys Leu Asp Lys Arg Asn Gly Gly
      85

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<210> 5298

<211> 1368

<212> PRT

<213> B.fragilis

<400> 5298

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Ile Ser Val Cys Asp His Lys Tyr Leu Phe Asp Ser Phe Leu Phe Gln
1              5              10              15
Thr Phe Val Leu Tyr Val Ile Lys Arg Arg Met Lys Lys Ser Thr Phe
      20              25              30
Thr Leu Ile Leu Phe Phe Ser Ser Val Ile Leu Tyr Ala Gln Gln Asn
      35              40              45
Glu Leu Met Phe His Ser Leu Gly Ser Gln His Gly Leu Thr Tyr Ser
      50              55              60
Ala Val Arg Asp Ile Leu Gln Asp Ser Lys Gly Tyr Ile Trp Ile Ala
65              70              75              80
Thr Leu Lys Gly Leu Asn Arg Tyr Asp Gly Tyr Asn Ile Lys Gln Tyr
      85              90              95
Tyr Lys Ser Asp Asp Gly Leu Ser Ser Asn Cys Ile Glu Lys Leu Leu
      100              105              110
Leu Leu Gly Gln Asp Thr Leu Leu Met Gly Thr Asn Glu Gly Leu Cys
      115              120              125
Leu Tyr Asp Met Met Arg Glu Lys Phe Thr Thr Ile Val Pro Gln Thr
      130              135              140

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Lys Ala Pro Leu Tyr Val Leu Asp Met Ala Tyr Asp Gly Arg Ser Val
 145 150 155 160
 Phe Ile Ala Ser Asp Ser Gly Leu Tyr Val Tyr Asn Lys Thr Glu Gln
 165 170 175
 Ser Met Pro Leu Leu His Lys Gly Leu Ile Val Lys Val Thr Leu Asp
 180 185 190
 Ile Asn Gly Asn Val Trp Ala Val Ser Pro Asn Thr Ile Tyr Cys Phe
 195 200 205
 Arg Pro Asn Gly Gln Met Thr Arg Lys Ile Thr Ala Thr Glu Val Ser
 210 215 220
 Pro Asp Tyr Pro Val Glu Phe Thr Ser Ile Tyr Lys Asp Ser Gln Gly
 225 230 235 240
 Thr Leu Trp Leu Gly Thr Thr Glu Asn Gly Leu Tyr Arg Tyr Asn Lys
 245 250 255
 Asn Tyr Asn Gln Phe Val Ser Val Glu Phe Ala Ser Gln Asp Arg Lys
 260 265 270
 Asp Met Arg Tyr Ile Arg Cys Ile Gln Glu Asp Met Arg Gly Asn Leu
 275 280 285
 Trp Ile Gly Thr Glu Asn Gly Leu Phe Ile Tyr Asp Tyr Thr Asp Asn
 290 295 300
 Ser Tyr Ile Gln Tyr Arg Gln His Ala Lys Asp Val Gln Ser Gly Leu
 305 310 315 320
 Thr Asp Asn Ala Ile Tyr Thr Ile Tyr Lys Ser Arg Gly Asp Ile Met
 325 330 335
 Trp Ile Gly Thr Phe Phe Gly Gly Val Ser Tyr Thr Ser Leu Thr Glu
 340 345 350
 Asn Asn Phe His Tyr Leu Ile Ala Asp Asn Gly Lys Gln Tyr Leu Lys
 355 360 365
 Gly Lys Ala Ile Ser Asn Ile Ile Lys Asp Lys Asn Gly Ala Leu Trp
 370 375 380
 Phe Ala Ser Glu Asp His Gly Ile Ser Ile Leu Tyr Pro Asp Gly His
 385 390 395 400
 Ile Arg Tyr Leu Asn Lys Ser Thr His Pro Ser Leu Asn Gly Asp Asn
 405 410 415
 Val His Ala Leu Ala Glu Asp His Ser Gly Asn Ile Trp Ile Gly Asn
 420 425 430
 Phe Ile Asp Gly Leu Gln Lys Val Asp Leu Ala Lys Gly Tyr Ile Arg
 435 440 445
 Ser Tyr Lys Asn Ile Ala Gly Gly His Ala Gly Leu Ser Asn Asn Ser
 450 455 460
 Ile Tyr Lys Leu Tyr Val His Asn Pro Asp Thr Met Phe Ile Gly Thr
 465 470 475 480
 Ser Gln Gly Val Asn Ile Tyr His Phe Arg Thr Asp Ser Phe Thr Pro
 485 490 495
 Phe Leu Pro Asp Val Phe Arg Leu Ile Arg Ile Asp Asp Ile Thr Arg
 500 505 510
 Asp Leu Lys Gly Asn Ile Trp Phe Ser Thr His Phe Asn Gly Ile Phe
 515 520 525
 Arg Tyr His Ile Pro Thr His Ser Ile His Arg Tyr Gln Lys Gly Val
 530 535 540
 Thr Gly Cys Lys Thr Met Thr Ser Asp Asn Ile Tyr Cys Ser Phe Val
 545 550 555 560
 Asp Ser Lys Gly Glu Val Trp Phe Gly Thr Ser Asn Gly Gly Leu Met
 565 570 575
 Lys Tyr Asn Ala Arg Ala Asp Ser Ile Gln Ala Phe Gly Lys Glu Asn
 580 585 590
 Glu Leu Arg Gln Arg Asp Ile Tyr Ser Ile Gln Glu Asp Ser Phe Gly
 595 600 605
 Tyr Leu Trp Met Ser Thr Asp Asn Gly Ile Phe Ser Phe Asn Pro Glu

610	615	620
Ser Arg Ser Phe Ala His Tyr Lys Val Ser Asp Asn Leu Val Ser Asn		
625	630	635
Gln Phe Asn Ala Cys Pro Gly Tyr Lys Asp Pro Asp Gly Thr Leu Phe		640
	645	650
Phe Gly Ser Ile Asn Gly Val Cys Phe Phe Arg Pro Glu Gly Leu Asn		655
	660	665
His Asn Ser Pro Thr Asn Asp Ile His Leu Thr Phe Ser Asp Phe Arg		670
	675	680
Ile Phe Asn Lys His Val Gln Pro Ser Pro Asp Gly Ile Leu Gln Asn		685
	690	695
Asn Ile Asp Ser Thr Ser Ala Ile Arg Leu Pro His Gly Met Asn Thr		700
705	710	715
Leu Thr Phe Asp Phe Leu Val Ile Asn Tyr Asn Glu Asn Cys Gln Ser		720
	725	730
Gln Leu Ser Cys Glu Tyr Tyr Leu Glu Gly Met Glu Thr Glu Trp Asn		735
	740	745
Ala Thr Gln Gln Ile Pro Gln Ser Val Thr Tyr Thr Asn Leu Asp Pro		750
	755	760
Gly Thr Tyr Gln Phe His Val Arg Val Ile Gly Lys Asn Gly Val Val		765
	770	775
Phe Asp Arg Arg Lys Ile Thr Ile Asn Ile Arg Pro His Phe Leu Leu		780
785	790	795
Ser Gly Phe Met Ile Thr Ile Tyr Ser Leu Ile Gly Leu Leu Ile Ser		800
	805	810
Phe Ile Ile Val Arg Phe Tyr Gln Val Arg Met Arg Asp Lys Met Asp		815
	820	825
Ile Arg Ile Glu Arg Met Glu Lys Asn Asn Leu Arg Glu Leu Asn Lys		830
	835	840
His Lys Leu Asn Phe Phe Thr Tyr Ile Thr His Glu Phe Lys Thr Pro		845
	850	855
Leu Ser Ile Leu Met Ala Val Phe Glu Asp Ile Ser Ile Gly Arg Asn		860
865	870	875
Asn Thr Ile Thr Gly Glu Glu Met Lys Ile Ile Asn Arg Asn Ile Gln		880
	885	890
Arg Leu Gln Phe Leu Ile Asn Gln Leu Leu Glu Phe Arg Ser Val Glu		895
	900	905
Thr Asp His Ala Arg Ile Glu Tyr Val Lys Gly Asp Ile Met Thr Tyr		910
	915	920
Gly Arg Ser Ile Phe Glu Leu Phe Ile Pro Val Phe Arg Gln Lys Gln		925
	930	935
Ile Val Phe Gln Tyr Ala Thr Ser Ala Asp Ser Tyr Tyr Thr Val Phe		940
945	950	955
Asp Arg Asp Lys Ile Glu Lys Ile Ile Ser Asn Leu Leu Ser Asn Ala		960
	965	970
Phe Lys His Ser Asp Pro Gln Ser Glu Ile Asn Phe Arg Ile Asp Val		975
	980	985
Asp Lys Ala Ser Gly Gln Leu Ile Leu Ser Cys His Asn Ser Ser Ser		990
	995	1000
Tyr Ile His Pro Glu Gln Arg Glu Ala Val Met Gln Pro Phe His Lys		1005
	1010	1015
Thr Asp Ser Ser Asp Gln Lys Tyr Ser Asn Thr Gly Ile Gly Leu Ala		1020
1025	1030	1035
Leu Val Asn Gly Leu Val Gln Leu Leu Ser Gly Thr Val Glu Ile Glu		1040
	1045	1050
Ser His Gln Asn Ser Gly Thr Thr Phe Lys Val Lys Leu Pro Leu Val		1055
	1060	1065
Glu Asp Ser Lys Asp Met Ile Ala Pro Asp Glu Thr Leu Asp Ile Val		1070
	1075	1080
		1085

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Asn Ser Pro Asp Val Val Ala Asp Thr Val Tyr Leu Leu Asn Asn Ser
1090                      1095                      1100
Gly Leu Lys Glu Asp Met Asn Ala Ala Asn Ala Glu Lys Lys Met Thr
1105                      1110                      1115                      1120
Val Leu Leu Val Glu Asp Asn Pro Asp Ile Asn Asn Ile Leu Lys Ser
                      1125                      1130                      1135
Lys Leu Leu Arg Leu Tyr Lys Val Lys Thr Ala Tyr Asn Gly Gln Glu
                      1140                      1145                      1150
Ala Val Glu Leu Leu Lys Thr His Ile Ile Asp Ile Ile Ile Ser Asp
                      1155                      1160                      1165
Ile Met Met Pro Tyr Met Asp Gly Tyr Glu Leu Ser Lys Tyr Ile Lys
                      1170                      1175                      1180
Thr Ser Arg Glu Tyr Ser His Ile Pro Val Ile Leu Ile Thr Ser Gln
1185                      1190                      1195                      1200
Pro Ser Lys Glu Asn Glu Leu Gln Gly Leu Ser Ala Gly Ala Asp Ala
                      1205                      1210                      1215
Tyr Ile Glu Lys Pro Phe Thr Phe Asp Glu Leu Asn Leu Arg Ile Thr
                      1220                      1225                      1230
Asn Leu Leu Lys Ala Lys Asn Asn Ile Arg Glu His Tyr His Asp Met
                      1235                      1240                      1245
Lys Ile Phe Gln Leu Asn Glu Leu Asn Asn Lys Asp Glu Glu Phe
                      1250                      1255                      1260
Ile Lys Ser Leu Thr Gln Phe Val Ile Glu His Ile Glu Asp Pro Glu
1265                      1270                      1275                      1280
Leu Ser Val Asp Gln Leu Thr Thr His Met Asn Ile Ser Arg Thr Gln
                      1285                      1290                      1295
Leu Tyr Asn Lys Leu Lys Lys Leu Leu Asn Leu Ser Ala Thr Glu Phe
                      1300                      1305                      1310
Ile Asn Lys Ile Lys Ile Asp Val Ala Lys Val Lys Ile Ile Lys Thr
                      1315                      1320                      1325
Asn Leu Thr Ile Ala Glu Ile Ser Trp Gln Leu Gly Phe Asn Asn Pro
                      1330                      1335                      1340
Ser Tyr Phe Ser Lys Thr Phe Lys Arg Phe Cys Gly Val Thr Pro Asn
1345                      1350                      1355                      1360
Glu Phe Lys Asn Gly Lys Ser Gln
                      1365

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<210> 5299

<211> 69

<212> PRT

<213> B.fragilis

<400> 5299

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His Trp Pro Trp Pro Asn Lys Cys Ser Asp Lys Tyr Glu Gly Ala Leu
1      5      10      15
Lys His Pro Arg Ile Tyr Leu Lys Ser Phe Asn Tyr Gln Ile Gly Cys
20     25     30
Gln His Phe Leu Asp Cys Leu Ser Lys Ser Leu Glu Met Gly Gly Cys
35     40     45
Arg Met Tyr Ile His Gly Thr Leu Val Phe Val Leu Phe Val Glu Asn
50     55     60
Glu Ser Tyr Gly Leu
65

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<210> 5300

<211> 382

<212> PRT

<213> B.fragilis

<400> 5300

Lys Ile Gly Gly Ile Met Lys Ser Phe Thr Phe Cys Ile Leu Leu Ala
 1 5 10 15
 His Val Leu Ala Phe Pro Leu Phe Ala Gln Lys Asn Ala Ala Val
 20 25 30
 Thr Leu Asn Leu Ala Lys Ala Val Thr Gln Ser Pro Lys Thr Val Leu
 35 40 45
 Met Ser Glu Leu Ala Ser Asp Val Arg Tyr Phe Pro Leu Glu Thr Thr
 50 55 60
 Asp Asn Cys Leu Leu Gly Asn Glu Cys Ser Ile Ile Tyr Ala Gly Asn
 65 70 75 80
 Ser Ile Ile Ala Gly Asp Ala Gln Thr Arg Ser Phe Tyr Arg Phe Asp
 85 90 95
 Lys Asn Gly Lys Phe Met Asn Lys Ile Gly Arg Gln Gly Gln Gly Pro
 100 105 110
 Glu Glu Tyr Ala Val Gly Leu Leu Phe Phe Thr Asp Pro Asp Asn Gln
 115 120 125
 Lys Leu Tyr Val Gln Asp Phe Gln Asp Ile Ile Cys Tyr Gly Phe Asn
 130 135 140
 Gly Lys Phe Leu Arg Arg Ile Pro Ala Pro His Leu Asn Met Gly Thr
 145 150 155 160
 Gly Ala Val Asp Gly Gln Gly Ser Ile Leu Tyr Cys Asp Asn Asn Tyr
 165 170 175
 Phe Met Arg Lys Asp Asn Pro Gln Gln Leu Phe Leu Ile Asp Glu Asn
 180 185 190
 Gly Lys Lys Leu Lys Ile Trp Lys Gly Tyr Met Glu Pro Gly Lys Lys
 195 200 205
 Tyr Gly Val Asn Leu Ser Thr Arg Asp Val Met Tyr Arg Tyr Gly Gly
 210 215 220
 Asp Ile Tyr Phe Lys Pro Ala Leu Glu Asn Leu Ile Tyr Lys Ile Asp
 225 230 235 240
 Ala Asn Arg Lys Lys Thr Leu Ala Trp Lys Phe Asp Cys Ser Gly Lys
 245 250 255
 Asp Val Asp Val Ser Ala Asn Glu Ile Asp Pro Gly Lys Arg Phe Gln
 260 265 270
 Ser Ile Ala Val Gln Gln Val Phe Glu Ser Asp Arg Tyr Phe Phe Val
 275 280 285
 Leu Tyr Val Leu Lys Asn Glu Ser Phe Val Gly Leu Tyr Asp Lys Gln
 290 295 300
 Lys Lys Ser Phe Ser Asn Val Ile Ile Lys Asp Asp Leu Ala Ala Gly
 305 310 315 320
 Phe Asp Phe Thr Pro Pro Gly Thr Gly Leu Gly Ser Gln Leu Ala Asn
 325 330 335
 Ala Arg Met Val Gly Tyr Leu Ser Lys Gly Lys Arg Tyr Ser Lys Ala
 340 345 350
 Leu Leu Pro Glu Arg Lys Lys Glu Leu Asp Glu Leu Ile Asn Arg Leu
 355 360 365
 Asp Glu Glu Asp Asn Pro Val Met Val Val Val Thr Leu Lys
 370 375 380

<210> 5301

<211> 418

<212> PRT

<213> B.fragilis

<400> 5301

Lys Lys Arg Gly Ile Ile Lys Gly Lys Val Val Glu Lys Gly Thr Tyr
 1 5 10 15
 Lys Val Met Leu Lys Ala Glu Asn Ala Leu Gly Thr Asp Thr Gln Glu

										20				25				30			
Leu	Leu	Ile	Asn	Ile	Gly	Asp	Glu	Leu	Leu	Leu	Thr	Pro	Pro	Met	Gly						
										35	40				45						
Trp	Asn	Ser	Trp	Asn	Thr	Phe	Gly	Arg	His	Leu	Thr	Glu	Glu	Leu	Leu						
										50	55				60						
Leu	Gln	Thr	Ala	Asp	Ala	Met	Val	Glu	Asn	Gly	Met	Arg	Asp	Leu	Gly						
65											70	75				80					
Tyr	Ala	Tyr	Ile	Asn	Ile	Asp	Asp	Phe	Trp	Gln	Leu	Pro	Glu	Arg	Gly						
										85	90				95						
Ala	Asp	Gly	His	Ile	Gln	Ile	Asp	Lys	Thr	Lys	Phe	Pro	Arg	Gly	Ile						
										100	105				110						
Lys	Tyr	Val	Ala	Asp	Tyr	Leu	His	Glu	Arg	Gly	Phe	Lys	Leu	Gly	Ile						
										115	120				125						
Tyr	Ser	Asp	Ala	Ala	Asp	Lys	Thr	Cys	Gly	Gly	Val	Cys	Gly	Ser	Tyr						
										130	135				140						
Gly	Tyr	Glu	Glu	Ile	Asp	Ala	Arg	Asp	Phe	Ala	Ser	Trp	Gly	Val	Asp						
145											150	155				160					
Leu	Leu	Lys	Tyr	Asp	Tyr	Cys	Asn	Ala	Pro	Ala	Gly	Arg	Val	Glu	Ala						
										165	170				175						
Met	Glu	Arg	Tyr	Glu	Lys	Met	Gly	Arg	Ala	Leu	Arg	Ala	Thr	Asp	Arg						
										180	185				190						
Ser	Ile	Val	Phe	Ser	Ile	Cys	Glu	Trp	Gly	Gln	Arg	Glu	Pro	Trp	Lys						
										195	200				205						
Trp	Ala	Lys	Lys	Val	Gly	Gly	His	Leu	Trp	Arg	Val	Ser	Gly	Asp	Ile						
										210	215				220						
Gly	Asp	Leu	Trp	Asn	Arg	Ser	Thr	Asp	Glu	Lys	Gly	Gly	Leu	Arg	Gly						
225											230	235				240					
Ile	Leu	Asn	Ile	Leu	Glu	Ile	Asn	Ala	Pro	Leu	Ser	Glu	Tyr	Ala	Arg						
										245	250				255						
Pro	Gly	Gly	Trp	Asn	Asp	Pro	Asp	Met	Leu	Val	Val	Gly	Ile	Gly	Gly						
										260	265				270						
Lys	Ser	Lys	Ser	Ile	Gly	Tyr	Glu	Ser	Glu	Gly	Cys	Thr	Asn	Glu	Gln						
										275	280				285						
Tyr	Gln	Ser	His	Phe	Ala	Leu	Trp	Cys	Met	Met	Ala	Ser	Pro	Leu	Leu						
										290	295				300						
Cys	Gly	Asn	Asp	Val	Arg	Gln	Met	Asn	Asp	Ser	Thr	Leu	Gln	Ile	Leu						
305											310	315				320					
Leu	Asn	Lys	Asp	Leu	Ile	Ala	Ile	Asp	Gln	Asp	Pro	Leu	Gly	Ile	Gln						
										325	330				335						
Ala	Glu	Arg	Ala	Ile	Arg	Ala	Asp	His	Tyr	Asp	Val	Trp	Val	Lys	Pro						
										340	345				350						
Leu	Ser	Asp	Gly	Ser	Lys	Ala	Ile	Ala	Cys	Leu	Asn	Arg	Ile	Ser	Gly						
										355	360				365						
Pro	Val	Asp	Val	Glu	Leu	Asn	Val	Lys	Thr	Val	Glu	Gly	Leu	Ser	Leu						
										370	375				380						
Asp	Arg	Val	Tyr	Asp	Val	Ile	Glu	Gly	Ser	Leu	Val	Ala	Glu	Ala	Ser						
385											390	395				400					
Thr	Gly	Trp	Val	Val	Lys	Leu	Ala	Pro	Gly	Glu	Cys	Lys	Val	Phe	Ile						
										405	410				415						
Cys	Lys																				

<210> 5302

<211> 96

<212> PRT

<213> B.fragilis

<400> 5302

Ile Ile Ile Met Glu Lys Lys Thr Ile Val Ala Arg Val Glu Val Leu

1		5		10		15									
Pro	Gly	Lys	Glu	Gln	Ala	Phe	Leu	Gln	Ala	Ala	Asp	Ala	Leu	Ile	Lys
		20						25					30		
Gly	Thr	Arg	Ala	Glu	Glu	Gly	Asn	Ile	Ser	Tyr	Asn	Leu	Tyr	Gln	Asn
		35					40					45			
Pro	Ser	Gln	Pro	Val	Ala	Phe	Ile	Phe	Tyr	Glu	Glu	Tyr	Lys	Asp	Gln
	50					55					60				
Arg	Ala	Met	Asp	Ile	His	Ala	Ala	Ser	Pro	His	Phe	Gln	Ala	Phe	Gly
65					70					75					80
Lys	Ala	Ile	Lys	Glu	Met	Leu	Ala	Ser	Asp	Leu	Ile	Ile	Glu	Thr	Phe
				85					90					95	

<210> 5303

<211> 1060

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (916)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5303

Ile	Thr	Asn	Ile	Met	Asn	Leu	Lys	Asp	Leu	Asn	Asn	Leu	Arg	Ala	Asp
1				5					10					15	
Thr	Glu	Gly	Arg	Ile	Lys	Ala	Val	Phe	Leu	Ile	Cys	Met	Phe	Val	Leu
			20					25					30		
Val	Ser	Ala	Gly	Gly	Phe	Ala	Gln	Asn	Thr	Lys	Ser	Ile	Ser	Gly	Thr
		35					40					45			
Val	Arg	Glu	Lys	Gly	Ser	Asn	Glu	Thr	Val	Ile	Gly	Ala	Thr	Val	Gln
	50					55					60				
Val	Lys	Gly	Thr	His	Asn	Gly	Val	Ile	Thr	Asn	Glu	Asn	Gly	Glu	Tyr
65				70						75					80
Thr	Ile	Lys	Asn	Val	Ser	Pro	Gly	Gln	Val	Leu	Val	Phe	Ser	Met	Ile
			85					90						95	
Gly	Met	Asn	Thr	Val	Glu	Lys	Thr	Val	Gly	Ser	Gln	Asn	Arg	Ile	Asp
		100						105					110		
Val	Leu	Met	Asp	Ala	Gly	Val	Leu	Ile	Asp	Glu	Val	Val	Val	Thr	Gly
	115						120					125			
Tyr	Gln	Thr	Gln	Arg	Lys	Val	Asp	Leu	Thr	Gly	Ser	Val	Ser	Ser	Leu
	130					135					140				
Ser	Ser	Asp	Gln	Phe	Met	Gln	Thr	Asn	Pro	Leu	Ser	Leu	Glu	Gln	Ala
145				150						155					160
Leu	Lys	Gly	Lys	Ile	Ser	Gly	Val	Gln	Val	Met	Asn	Asn	Asp	Gly	Ala
				165					170					175	
Pro	Gly	Gly	Gly	Ile	Thr	Ile	Lys	Ile	Arg	Gly	Ala	Ser	Ser	Ile	Thr
			180					185						190	
Ala	Gly	Ser	Ser	Pro	Leu	Tyr	Val	Ile	Asp	Gly	Phe	Pro	Leu	Pro	Ile
	195						200						205		
Ser	Asp	Asp	Pro	Leu	Glu	Ser	Pro	Leu	Ala	Thr	Ile	Ser	Pro	Asp	Ala
	210					215					220				
Ile	Glu	Ser	Ile	Ser	Ile	Leu	Lys	Asp	Val	Ser	Ser	Thr	Ala	Ile	Tyr
225					230					235					240
Gly	Ala	Gln	Gly	Ala	Asn	Gly	Val	Val	Leu	Ile	Thr	Thr	Lys	Lys	Gly
				245					250					255	
Ser	Ala	Gly	Met	Ser	Glu	Ile	Ser	Val	Lys	Ala	Thr	Tyr	Gly	Ile	Ser
			260					265					270		
Lys	Leu	Ala	Asn	Ser	Ile	Pro	Met	Leu	Gly	Ala	Glu	Asp	Tyr	Met	Arg
		275					280						285		

100	105	110
Arg Ile Asn Lys Gly Lys Phe Thr Leu Asn Gly Gln Thr Tyr Gln Leu		
115	120	125
Pro Ile Asn Asp Thr Pro Asn Ser Leu His Gly Gly Phe Lys Gly Phe		
130	135	140
Asp Met Val Val Trp Asp Val Glu Gln Pro Asp Ser Gln Thr Leu Gln		
145	150	155
Leu Thr Tyr Leu Ser Lys Asp Gly Glu Glu Gly Tyr Pro Gly Asn Leu		
165	170	175
Gln Val Ser Met Ser Tyr Lys Leu Thr Asp Lys Asn Glu Phe Ile Ile		
180	185	190
Thr His Gln Ala Gln Thr Asp Lys Glu Thr Val Ile Asn Leu Thr His		
195	200	205
His Ser Phe Phe Asn Leu His Gly Ala Gly Asn Lys Asp Ile Asn Asp		
210	215	220
His Ile Leu Met Ile Asn Ala Asp Lys Phe Thr Pro Val Asp Gln Ile		
225	230	235
Leu Ile Pro Thr Gly Ile Leu Gln Asp Val Glu Gly Thr Pro Met Asp		
245	250	255
Phe Arg Arg Pro Thr Pro Ile Gly Lys Arg Val Asn Asp Ser Phe Glu		
260	265	270
Gln Leu Glu Phe Gly His Gly Tyr Asp His Asn Trp Val Leu Asn Arg		
275	280	285
Lys Thr Ser Asn Thr Pro Glu Leu Ala Ala Thr Val Tyr Glu Pro Ala		
290	295	300
Ser Gly Arg Tyr Leu Glu Val Trp Thr Thr Glu Pro Gly Leu Gln Phe		
305	310	315
Tyr Gly Gly Asn Phe Phe Asp Gly Thr Met Thr Gly Lys His Glu Lys		
325	330	335
Lys Tyr Asn Tyr Arg Ala Ser Leu Ala Leu Glu Thr Gln His Tyr Pro		
340	345	350
Asp Ser Pro Asn Gln Pro Ala Phe Pro Ser Thr Thr Leu Leu Pro Gly		
355	360	365
Asp Thr Tyr Lys His Ile Cys Ile Tyr Lys Ile Asn Val Gln		
370	375	380

<210> 5305

<211> 271

<212> PRT

<213> B.fragilis

<400> 5305

Lys Ser Asn Met Glu Leu Asp Leu Gln Gln Leu Thr Thr Glu Val Cys	
1	5
Arg Ile Ala Thr Glu Ala Gly Asn Phe Leu Arg Lys Glu Arg Arg Ser	
20	25
Phe Ser Arg Glu Arg Val Val Glu Lys His Ala His Asp Tyr Val Ser	
35	40
Tyr Val Asp Lys Glu Ser Glu Arg Leu Leu Val Ala Gln Leu Ser Ala	
50	55
Leu Leu Pro Glu Ala Gly Phe Ile Ala Glu Glu Gly Ser Ala Val Tyr	
65	70
Lys Asn Glu Pro Tyr Cys Trp Val Ile Asp Pro Leu Asp Gly Thr Thr	
85	90
Asn Tyr Ile His Asp Asn Ala Pro Tyr Cys Val Ser Ile Ala Leu Arg	
100	105
Ser Cys Thr Glu Leu Leu Leu Gly Val Val Tyr Glu Val Cys Arg Asp	
115	120
Glu Cys Phe Tyr Ala Trp Lys Gly Gly Lys Ala Trp Met Asn Gly Asp	

130		135		140
Glu Leu His Val Ser Lys Ile Glu Asn Ile Glu Glu Ala Phe Val Ile				
145		150		155
Thr Glu Leu Pro Tyr Asn His Arg Gln Tyr Lys Arg Thr Ala Glu Tyr				160
	165		170	175
Leu Leu Lys Gln Leu Tyr Gly Val Val Gly Gly Ile Arg Met Asn Gly				
	180		185	190
Ser Ala Ala Ser Ala Leu Cys Tyr Val Ala Ala Gly Arg Phe Asp Ala				
	195		200	205
Trp Ala Glu Ala Phe Ile Gly Lys Trp Asp Tyr Ser Ala Ala Ala Leu				
	210		215	220
Ile Val Leu Glu Ala Gly Gly Lys Val Thr Asp Phe Phe Gly Ser Glu				
225		230		235
Tyr Phe Ile Glu Gly His His Ile Ile Ala Thr Asn Gly Pro Leu His				240
	245		250	255
Pro Val Phe Gln Arg Leu Leu Lys Glu Met Pro Pro Leu Glu Met				
	260		265	270

<210> 5306
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 5306
Gly Thr Ala Met Lys Lys Ile Leu Leu Ala Leu Leu Thr Ser Cys Ala
1 5 10 15
Leu Val Ser Cys Glu Gly Tyr Phe Asp Gln Leu Pro Lys Thr Glu Leu
20 25 30
Pro Ser Glu Thr Phe Tyr Thr Ser Tyr Asp Ala Ala Leu Arg Asn Val
35 40 45
Ala Ile Leu Tyr Ala Asn Ala Gly His Val Asn Asp Gly Ile Met Thr
50 55 60
Thr Asp Arg Phe Met Met Pro Ser Leu Met Asn Glu Gly Pro Phe Asp
65 70 75 80
Leu Thr Ser Thr Ser Val Phe Thr Thr Gly Leu Gln Gly Cys Thr
85 90 95

<210> 5307
 <211> 443
 <212> PRT
 <213> B.fragilis

<400> 5307
Tyr Ile Cys Ile Met Lys Asn Thr Ala Lys Asn Phe Met Phe Tyr Val
1 5 10 15
Ala Phe Val Ala Ser Leu Gly Gly Leu Leu Phe Gly Phe Asp Thr Ala
20 25 30
Val Ile Ser Gly Ala Glu Lys Ser Ile Gln Val Val Tyr Asp Leu Ser
35 40 45
Asp Phe Ser His Gly Phe Thr Ile Ala Ile Ala Leu Ile Gly Thr Ile
50 55 60
Ile Gly Ala Phe Val Cys Ser Lys Pro Val Glu Lys His Gly Arg Leu
65 70 75 80
Lys Ala Leu Lys Ile Ile Ala Phe Leu Tyr Phe Val Ser Ala Val Gly
85 90 95
Ser Ala Ala Ile Ile Asp Trp Tyr Ser Phe Leu Phe Phe Arg Phe Ala
100 105 110
Gly Gly Leu Ala Val Gly Ala Ser Ser Val Val Gly Pro Met Tyr Ile
115 120 125

Ala Glu Ile Ser Pro Ser Arg Trp Arg Gly Arg Phe Val Ala Phe Phe
 130 135 140
 Gln Phe Asn Ile Val Leu Gly Ile Val Leu Ala Tyr Phe Ser Asn Tyr
 145 150 155 160
 Trp Ile His Gly Ile Ala His Asp Trp Gln Trp Met Leu Gly Val Glu
 165 170 175
 Ala Ile Pro Ala Ile Ala Phe Ala Leu Leu Leu Tyr Thr Val Pro Glu
 180 185 190
 Ser Pro Arg Trp Leu Val Lys Gln Asp Arg Glu Ala Glu Ala Arg His
 195 200 205
 Val Ile Lys Lys Val Ser Asn Ala Asn Ile Glu Gln Glu Ile His Glu
 210 215 220
 Ile Lys Glu Ser Leu Val Thr Ile Gly Ala Ser Gly Glu Lys Leu Phe
 225 230 235 240
 Gln His Lys Tyr Arg Lys Pro Ile Leu Tyr Ala Phe Leu Ile Ala Thr
 245 250 255
 Phe Asn Gln Leu Ser Gly Ile Asn Ala Ile Leu Tyr Tyr Ala Pro Arg
 260 265 270
 Ile Phe Glu Met Ser Gly Val Phe Thr Asp Ser Ala Met Met Gln Ser
 275 280 285
 Ile Val Ile Gly Leu Thr Asn Leu Thr Phe Thr Met Ile Gly Met Ile
 290 295 300
 Leu Ile Asp Gln Val Gly Arg Lys Lys Leu Leu Tyr Ile Gly Ser Ile
 305 310 315 320
 Gly Met Thr Phe Ser Leu Ala Leu Val Ala Lys Gly Phe Tyr Gln Gly
 325 330 335
 Ala Phe Ser Gly Tyr Tyr Met Leu Ile Cys Leu Met Gly Phe Ile Ala
 340 345 350
 Phe Phe Ala Ile Ser Leu Gly Ala Val Ile Trp Val Leu Ile Ser Glu
 355 360 365
 Val Phe Pro Asn Asn Val Arg Ser Lys Gly Gln Val Leu Gly Ser Met
 370 375 380
 Thr His Trp Val Trp Ser Ala Leu Leu Ser Trp Met Phe Pro Val Phe
 385 390 395 400
 Ile Arg Thr Gly Gly Thr Phe Ile Phe Ser Phe Phe Ala Ile Met Met
 405 410 415
 Phe Leu Ser Phe Phe Ala Leu Arg Leu Pro Glu Thr Lys Asn Lys
 420 425 430
 Ser Leu Glu Gln Ile Gln Lys Glu Leu Thr Asn
 435 440

<210> 5308

<211> 65

<212> PRT

<213> B.fragilis .

<400> 5308

Ala Ser Thr Ile Pro Ser Thr Ile Leu Asn Trp Lys Asn Ala Thr Lys
 1 5 10 15
 Arg Pro Arg Gln Arg Glu Gly Asp Ile Ser Ala Met Tyr Met Gly Pro
 20 25 30
 Thr Thr Asp Glu Ala Pro Thr Ala Lys Pro Pro Ala Lys Arg Lys Asn
 35 40 45
 Lys Lys Glu Tyr Gln Ser Met Met Ala Ala Leu Pro Thr Ala Glu Thr
 50 55 60
 Lys
 65

<210> 5309

<211> 68
 <212> PRT
 <213> B.fragilis

<400> 5309
 Ser Gln Arg Ser Leu Ser Gln Arg Tyr Cys Ile Phe Ser Asn Ala Thr
 1 5 10 15
 Asn Gln Ser Ile Phe Phe Ile Glu Asp Trp His Tyr Leu Leu Val Leu
 20 25 30
 Phe Tyr Trp Lys Ser Glu Gly Ile Ser Ile Pro Phe Phe Asn Pro Ile
 35 40 45
 Ala Ile Pro Asn Pro Ala Thr Pro Tyr Ser Asp Lys Gln Arg Met Lys
 50 55 60
 Asp Asn Arg Ser
 65

<210> 5310
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 5310
 Lys Asn Phe Pro Tyr Tyr Gly Trp Asp Ala Phe Ala Asn Asp Lys Ser
 1 5 10 15
 Lys Gln Asp Ala Ile Val Pro Leu Pro Met Ile Leu Pro Asp Phe Asp
 20 25 30
 Ser Gln Glu Arg Cys Tyr Tyr Tyr Ser Ala Gln Pro Val Ile Ser Asp
 35 40 45
 Val Cys Glu Ile Ser Arg Asp Tyr Phe Asn Lys Asp Phe Ser Lys Asn
 50 55 60
 Tyr Lys Leu Glu Phe Lys Leu Lys Ile Val Asn Tyr Phe Phe Asn
 65 70 75

<210> 5311
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 5311
 Ile Thr Met Leu Ser Leu Gln Ser Glu Ile Asp Ser Leu Cys Ala Val
 1 5 10 15
 Ser His Glu Leu Leu His Leu Gly Leu Asp Gly Glu Pro Ile Tyr Ser
 20 25 30
 Asp Arg Phe Arg Gln Leu Asn Thr Asp Val Tyr His Arg Cys Glu His
 35 40 45
 Leu Phe Gly Ser His Gly Arg Thr Leu Glu Glu Glu Ala Ser Leu Cys
 50 55 60
 Ile Ala Leu Leu Thr Gly Tyr Asn Ala Thr Ile Tyr Asn His Gly Asp
 65 70 75 80
 Lys Glu Asp Lys Ile Gln Ser Val Leu Asn Arg Ser Trp Asp Leu Leu
 85 90 95
 Asp Thr Leu Pro Val Ser Leu Leu Lys Cys Arg Leu Leu Val Ala Cys
 100 105 110
 Tyr Ala Glu Val Phe Asp Glu Glu Leu Ala Ala Glu Ala His Ala Ile
 115 120 125
 Ile Asp Gly Trp Lys Asp Arg Glu Leu Thr Arg Glu Glu Phe Glu Ile
 130 135 140
 Val Glu His Leu Lys Ser Leu Glu Glu Asn Pro Tyr Pro Asn Thr Asp
 145 150 155 160

Ile Glu

<210> 5312

<211> 209

<212> PRT

<213> B.fragilis

<400> 5312

```

Arg Asp Arg Pro Phe Asn Asn Thr Asn His His Asn Ser Asn Lys Ile
1      5      10      15
Met Ala Ala Thr Lys Ile Phe Asn Leu Trp Ala Lys Arg Ser Pro Glu
      20      25      30
Trp Glu Thr Lys Tyr Glu Asp Thr Leu Leu Lys Ala Phe Cys Asp Tyr
      35      40      45
Gly Lys Gly Ser Thr Ser Tyr Gln Glu Thr Arg Ala Lys Leu Phe Gly
      50      55      60
Ala Gly Tyr Glu Leu Tyr Ile Leu Ala Phe Phe Ile Gly Leu Tyr His
65      70      75      80
Gly Gln Thr Lys Asp Leu Val Ala Asp Lys Ala Lys Arg Lys Asp Phe
      85      90      95
Gly Trp Ala Ile Glu Asn Trp Gly Thr Ala Glu Ala Arg Gly Gly Arg
      100     105     110
Lys Gln Tyr Gly Gln Ile Arg Glu Tyr Met Phe Met Ala Leu Val Ala
      115     120     125
Arg Thr Gly Ile Asp Trp Ile Ala Leu Asp Lys Gly Asp Ile Thr Pro
      130     135     140
Arg Lys Val Val Asp Leu Leu Ile Asp Lys Met Glu Lys Tyr Ala Asn
145     150     155     160
Phe Gly Phe Asp Phe Met Gln Asp Lys Leu Glu Asp Asn Pro Asp Tyr
      165     170     175
Phe Tyr Lys Glu Thr Ala Phe Leu Gln Val Phe Leu Asn Phe Met Gln
      180     185     190
Pro Ser Thr Ser Glu Asn Ala Glu Glu Glu Glu Glu Ala Glu Ser Leu
      195     200     205
Asp

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<210> 5313

<211> 200

<212> PRT

<213> B.fragilis

<400> 5313

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Tyr Phe Cys Thr Leu Phe Ser Gln Glu Ile Asp Gln Glu Met Ile Glu
1      5      10      15
Asp Ile Lys Lys Ala Cys Gln Val Met Ser Glu Gly Gly Val Ile Leu
      20      25      30
Tyr Pro Thr Asp Thr Val Trp Gly Ile Gly Cys Asp Ala Thr Asn Glu
      35      40      45
Asp Ala Val Arg Arg Val Tyr Glu Ile Lys Arg Arg Ala Asp Ser Lys
      50      55      60
Ala Met Leu Val Leu Val Asp Ser Pro Val Lys Val Glu Phe Tyr Val
65      70      75      80
Gln Asp Val Pro Ser Val Ala Trp Asp Leu Ile Glu Val Ala Asp Lys
      85      90      95
Pro Leu Thr Ile Ile Tyr Ser Gly Ala Arg Asn Leu Ala Ser Asn Leu
      100     105     110
Leu Ala Glu Asp Gly Ser Val Gly Ile Arg Val Thr Asn Glu Ala Phe

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115	120	125
Ser Arg Arg Leu Cys Gln Gln Phe Arg Lys Ala Ile Val Ser Thr Ser		
130	135	140
Ala Asn Val Ser Gly Gln Pro Gly Ala Ala Asn Phe Asn Glu Ile Ser		
145	150	155
Glu Glu Ile Lys Ser Ser Val Asp Tyr Ile Val Asn Phe Arg Gln Asp		
	165	170
Asp Met Ser Arg Pro Lys Pro Ser Ser Ile Ile Lys Leu Asp Lys Gly		
	180	185
Gly Val Ile Lys Ile Ile Arg Glu		190
	195	200

<210> 5314

<211> 640

<212> PRT

<213> B.fragilis

<400> 5314

Arg Tyr Gln Thr Asp Arg Val Thr Tyr Gln Glu Ile Leu Lys Gln Tyr	
1	5
Trp Gly Tyr Asp Ser Phe Arg Asp Leu Gln Glu Asp Ile Ile Thr Ser	
	20
Ile Gly Asn Gly Lys Asp Thr Leu Gly Leu Met Pro Thr Gly Gly Gly	
	35
Lys Ser Ile Thr Phe Gln Val Pro Ala Leu Ala Lys Glu Gly Leu Cys	
	50
Ile Val Ile Thr Pro Leu Ile Ala Leu Met Lys Asp Gln Val Gln Asn	
65	70
Leu Lys Lys Arg Gly Ile Lys Ala Ile Ala Ile Tyr Ser Gly Met Thr	
	85
Arg Gln Glu Ile Val Val Ala Leu Glu Asn Cys Ile Phe Gly Asp Tyr	
	100
Lys Phe Leu Tyr Ile Ser Pro Glu Arg Leu Asp Thr Glu Ile Phe Arg	
	115
Ala Lys Leu Arg Ser Met Lys Ile Ser Met Ile Thr Val Asp Glu Ser	
	130
His Cys Ile Ser Gln Trp Gly Tyr Asp Phe Arg Pro Ala Tyr Leu Lys	
145	150
Ile Ala Asp Ile Arg Asp Leu Val Pro Asp Ala Pro Val Leu Ala Leu	
	165
Thr Ala Thr Ala Thr Pro Glu Val Val Lys Asp Ile Gln Glu Arg Leu	
	180
Arg Phe Arg Glu Glu Asn Val Phe Arg Met Ser Phe Glu Arg Lys Asn	
	195
Leu Ala Tyr Ile Val Arg Pro Thr Asp Asn Lys Asn Gly Glu Leu Leu	
	210
His Ile Leu Asn Arg Ile Gln Gly Ser Ala Ile Val Tyr Val Arg Ser	
225	230
Arg Arg Lys Thr Lys Glu Thr Thr Glu Leu Leu Val Asn Glu Gly Ile	
	245
Thr Ala Asp Phe Tyr His Ala Gly Leu Asp Asn Ala Thr Lys Asp Leu	
	260
Arg Gln Lys Arg Trp Gln Asn Gly Glu Ser Arg Val Met Val Ala Thr	
	275
Asn Ala Phe Gly Met Gly Ile Asp Lys Pro Asp Val Arg Ile Val Ile	
	290
His Leu Asp Leu Pro Asp Ser Pro Glu Ala Tyr Phe Gln Glu Ala Gly	
305	310
Arg Ala Gly Arg Asp Gly Gln Lys Ala Tyr Ala Val Ile Leu Tyr Ala	

										100										105										110				
Gln	Phe	Tyr	Ser	Asn	Leu	Asp	Tyr	Tyr	Ile	Pro	Asp	Arg	Tyr	Asn	Glu																			
										115					120					125														
Gly	Tyr	Gly	Ile	Ser	Lys	Lys	Gly	Val	Asp	Tyr	Ala	Ala	Glu	Thr	Gly																			
										130					135					140														
Val	Gly	Leu	Ile	Ile	Val	Leu	Asp	Cys	Gly	Ile	Lys	Ala	Val	Glu	Glu																			
										145					150					155					160									
Ile	Ala	Tyr	Ala	Lys	Glu	Lys	Gly	Ile	Asp	Phe	Ile	Ile	Cys	Asp	His																			
										165					170					175														
His	Val	Pro	Asp	Asp	Val	Leu	Pro	Pro	Ala	Val	Ala	Ile	Leu	Asn	Ala																			
										180					185					190														
Lys	Arg	Leu	Asp	Asn	Thr	Tyr	Pro	Tyr	Thr	His	Leu	Ser	Gly	Cys	Gly																			
										195					200					205														
Val	Gly	Phe	Lys	Phe	Met	Gln	Ala	Phe	Ala	Ile	Ser	Asn	Gly	Ile	Glu																			
										210					215					220														
Phe	His	His	Leu	Ile	Pro	Leu	Leu	Asp	Leu	Thr	Ala	Val	Ser	Ile	Ala																			
										225					230					235					240									
Ser	Asp	Ile	Val	Pro	Ile	Met	Gly	Glu	Asn	Arg	Ile	Leu	Ala	Tyr	His																			
										245					250					255														
Gly	Leu	Lys	Gln	Leu	Asn	Gly	Asn	Pro	Ser	Val	Gly	Leu	Lys	Ala	Ile																			
										260					265					270														
Ile	Asp	Val	Cys	Gly	Leu	Ser	Glu	Lys	Glu	Ile	Thr	Val	Ser	Asp	Ile																			
										275					280					285														
Val	Phe	Lys	Ile	Gly	Pro	Arg	Ile	Asn	Ala	Ser	Gly	Arg	Ile	Gln	Asn																			
										290					295					300														
Gly	Lys	Glu	Ala	Val	Asp	Leu	Leu	Ile	Glu	Lys	Asp	Phe	Ser	Ala	Ala																			
										305					310					315					320									
Leu	Glu	Lys	Ala	Gly	Gln	Ile	Asn	Gln	Tyr	Asn	Glu	Thr	Arg	Lys	Asp																			
										325					330					335														
Leu	Asp	Lys	Ser	Met	Thr	Glu	Glu	Ala	Asn	Lys	Ile	Val	Ala	Glu	Leu																			
										340					345					350														
Glu	Gly	Leu	Ala	Asp	Arg	Arg	Ser	Ile	Val	Leu	Tyr	Asn	Glu	Asp	Trp																			
										355					360					365														
His	Lys	Gly	Val	Ile	Gly	Ile	Val	Ala	Ser	Arg	Leu	Thr	Glu	Ile	Tyr																			
										370					375					380														
Tyr	Arg	Pro	Ala	Val	Val	Leu	Thr	Arg	Thr	Asp	Asp	Met	Ala	Thr	Gly																			
										385					390					395					400									
Ser	Ala	Arg	Ser	Val	Ser	Gly	Phe	Asp	Val	Tyr	Lys	Ala	Ile	Glu	His																			
										405					410					415														
Cys	Arg	Asp	Leu	Glu	Asn	Phe	Gly	Gly	His	Thr	Tyr	Ala	Ala	Gly																				
										420					425					430														
Leu	Ser	Met	Lys	Val	Glu	Asn	Val	Gln	Ala	Phe	Thr	Glu	Arg	Phe	Glu																			
										435					440					445														
Ser	Phe	Val	Ser	Glu	His	Ile	Leu	Pro	Glu	Gln	Thr	Ser	Ala	Val	Ile																			
										450					455					460														
Asp	Ile	Asp	Ala	Glu	Ile	Asp	Phe	Lys	Asp	Ile	Thr	Pro	Lys	Phe	Phe																			
										465					470					475					480									
Asn	Glu	Leu	Lys	Arg	Phe	Asn	Pro	Phe	Gly	Pro	Asp	Asn	Gln	Lys	Pro																			
										485					490					495														
Val	Phe	Cys	Thr	His	His	Val	Tyr	Asp	Tyr	Gly	Thr	Ser	Lys	Val	Val																			
										500					505					510														
Gly	Arg	Asp	Gln	Glu	His	Ile	Lys	Leu	Glu	Leu	Val	Asp	Asn	Lys	Ser																			
										515					520					525														
Asn	Asn	Val	Met	Asn	Gly	Ile	Ala	Phe	Gly	Gln	Ser	Ser	His	Val	Arg																			
										530					535					540														
Tyr	Ile	Lys	Thr	Lys	Arg	Ser	Phe	Asp	Ile	Cys	Tyr	Thr	Ile	Glu	Glu																			
										545					550					555					560									
Asn	Thr	His	Lys	Arg	Gly	Glu	Val	Gln	Leu	Gln	Ile	Glu	Asp	Ile	Lys																			
										565					570					575														

Pro Ile Glu

<210> 5316

<211> 400

<212> PRT

<213> B.fragilis

<400> 5316

Thr	Asn	Thr	Ala	Ile	Val	Met	Asn	Thr	Thr	Glu	Tyr	Leu	Gln	Thr	Trp
1				5					10					15	
Ser	Asp	Ser	Tyr	Lys	Asn	Asp	Met	Ile	Ser	Asn	Ile	Met	Pro	Phe	Trp
			20					25					30		
Met	Lys	Tyr	Gly	Trp	Asp	Arg	Lys	Asn	Gly	Gly	Val	Tyr	Thr	Cys	Val
			35				40					45			
Asp	Arg	Asp	Gly	Gln	Leu	Met	Asp	Thr	Thr	Lys	Ser	Val	Trp	Phe	Gln
			50			55					60				
Gly	Arg	Phe	Ala	Phe	Thr	Cys	Ser	Tyr	Ala	Tyr	Asn	His	Ile	Glu	Arg
65					70					75				80	
Asn	Thr	Glu	Trp	Leu	Ala	Ala	Ala	Lys	Ser	Thr	Leu	Asp	Phe	Ile	Glu
				85					90					95	
Ala	His	Cys	Phe	Asp	Thr	Asp	Gly	Arg	Met	Phe	Phe	Glu	Val	Thr	Glu
			100					105					110		
Thr	Gly	Leu	Pro	Ile	Arg	Lys	Arg	Arg	Tyr	Val	Phe	Ser	Glu	Thr	Phe
			115					120					125		
Ala	Ala	Ile	Ala	Met	Ser	Glu	Tyr	Ala	Ile	Ala	Ser	Gly	Asp	His	Ser
			130					135				140			
Tyr	Ala	Val	Lys	Ala	Leu	Lys	Leu	Phe	Asn	Asp	Ile	Arg	His	Phe	Leu
145					150					155				160	
Ser	Thr	Pro	Gly	Ile	Leu	Glu	Pro	Lys	Tyr	Cys	Glu	Arg	Val	Gln	Met
				165					170					175	
Lys	Gly	His	Ser	Ile	Ile	Met	Ile	Leu	Ile	Asn	Val	Ala	Ser	Arg	Ile
			180					185					190		
Arg	Ala	Ala	Ile	Asn	Asp	Pro	Val	Leu	Asp	Arg	Gln	Ile	Glu	Glu	Ser
			195				200					205			
Ile	Ala	Ile	Leu	Arg	Lys	Asp	Phe	Met	His	Pro	Glu	Phe	Lys	Ala	Leu
			210			215					220				
Leu	Glu	Thr	Val	Gly	Pro	Asn	Gly	Glu	Phe	Ile	Asp	Thr	Asn	Ala	Thr
					230					235				240	
Arg	Thr	Ile	Asn	Pro	Gly	His	Cys	Ile	Glu	Thr	Ser	Trp	Phe	Ile	Leu
			245						250					255	
Glu	Glu	Ala	Lys	Asn	Arg	Asn	Trp	Asp	Lys	Glu	Met	Val	Asp	Thr	Ala
			260					265					270		
Leu	Thr	Ile	Leu	Asp	Trp	Ser	Trp	Glu	Trp	Gly	Trp	Asp	Lys	Glu	Tyr
			275				280					285			
Gly	Gly	Ile	Ile	Asn	Phe	Arg	Asp	Cys	Arg	Asn	Leu	Pro	Ser	Gln	Asp
			290			295					300				
Tyr	Ala	His	Asp	Met	Lys	Phe	Trp	Trp	Pro	Gln	Thr	Glu	Ala	Ile	Ile
305					310					315				320	
Ala	Thr	Leu	Tyr	Ala	Tyr	Gln	Ala	Thr	Lys	Asn	Glu	Lys	Tyr	Leu	Ala
				325					330					335	
Met	His	Lys	Gln	Ile	Ser	Asp	Trp	Thr	Tyr	Ala	His	Phe	Pro	Asp	Ala
			340					345					350		
Glu	Phe	Gly	Glu	Trp	Tyr	Gly	Tyr	Leu	His	Arg	Asp	Gly	Thr	Ile	Ser
			355				360					365			
Gln	Pro	Ala	Lys	Gly	Asn	Leu	Phe	Lys	Gly	Pro	Phe	His	Ile	Pro	Arg
			370			375					380				
Met	Met	Thr	Lys	Gly	Tyr	Ala	Leu	Cys	Gln	Glu	Leu	Leu	Ser	Glu	Lys
385					390					395					400

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400

<210> 5317
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 5317
 Leu Val Phe Ala Thr Phe Ala Asn Cys Glu Lys Thr Leu Ser Phe Lys
 1 5 10 15
 Gly Trp Asn Cys Gln Phe Met Ile Gln Phe Tyr Asn Glu Tyr Asn Gln
 20 25 30
 Gln Phe Thr Asn Thr Lys Gln Pro Val Ser Tyr Leu Asp Asp Val Ser
 35 40 45
 Leu Tyr Leu Pro Val Met His Leu Ser Trp Ser His Asn Ile Val Leu
 50 55 60
 Met Gln Lys Val Lys Asp Leu Lys Ala Arg Asn Trp Tyr Met Ile Gln
 65 70 75 80
 Ser Leu Lys Asn Gly
 85

<210> 5318
 <211> 439
 <212> PRT
 <213> B.fragilis

<400> 5318
 Ile Ser Glu Ala Met Asn Thr Lys Tyr Trp Glu Glu Glu Ile Glu Thr
 1 5 10 15
 Met Ser Arg Lys Lys Leu Gln Glu Leu Gln Leu Gln Arg Leu Lys Lys
 20 25 30
 Thr Ile Asn Ile Ala Ala Asn Ala Pro Tyr Tyr Lys Lys Val Phe Gln
 35 40 45
 Glu His Gly Ile Thr Pro Glu Ser Ile Gln Ser Leu Asp Asp Ile Arg
 50 55 60
 Lys Leu Pro Phe Thr Thr Lys Ala Asp Met Arg Ala Asn Tyr Pro Phe
 65 70 75 80
 Gly Leu Val Ala Gly Asn Met Lys Glu Asp Gly Val Arg Ile His Ser
 85 90 95
 Ser Ser Gly Thr Thr Gly Thr Pro Thr Val Ile Val His Ser Gln His
 100 105 110
 Asp Leu Asp Ser Trp Ala Asn Leu Val Ala Arg Cys Leu Tyr Cys Val
 115 120 125
 Gly Ile Arg Asn Thr Asp Val Phe Gln Asn Ser Ser Gly Tyr Gly Met
 130 135 140
 Phe Thr Gly Gly Leu Gly Phe Gln Tyr Gly Ala Glu Arg Leu Gly Ala
 145 150 155 160
 Leu Thr Val Pro Ala Ala Ala Gly Asn Ser Lys Arg Gln Ile Lys Phe
 165 170 175
 Ile Thr Asp Phe Lys Thr Thr Ala Leu His Ala Ile Pro Ser Tyr Ala
 180 185 190
 Ile Arg Leu Ala Glu Val Phe Gln Glu Glu Gly Ile Asp Pro Arg Ser
 195 200 205
 Thr Thr Leu Lys Thr Leu Val Ile Gly Ala Glu Pro His Thr Asp Glu
 210 215 220
 Gln Arg Lys Lys Ile Glu Arg Met Leu Gly Val Lys Ala Tyr Asn Ser
 225 230 235 240
 Phe Gly Met Thr Glu Met Asn Gly Pro Gly Val Ala Phe Glu Cys Thr
 245 250 255
 Glu Gln Asn Gly Met His Phe Trp Glu Asp Cys Tyr Tyr Val Glu Ile

260	265	270
Ile Asn Pro Glu Thr Gly Glu	Pro Val Pro Glu Arg Glu	Ile Gly Glu
275	280	285
Leu Val Leu Thr Thr Leu Asp	Arg Glu Met Met Pro Leu	Ile Arg Tyr
290	295	300
Arg Thr Arg Asp Leu Thr	Arg Ile Leu Pro Gly Asn	Cys Pro Cys Gly
305	310	315
Arg Thr His Ile Arg Ile Asp	Arg Ile Lys Gly Gly Ser	Asp Asp Met
325	330	335
Phe Ile Ile Lys Gly Val Asn	Ile Phe Pro Met Gln Val	Glu Lys Ile
340	345	350
Leu Val Gln Phe Pro Glu Leu	Gly Ser Asn Tyr Leu Ile	Thr Leu Glu
355	360	365
Thr Val Asn Asn Gln Asp Glu	Met Ile Val Glu Val Glu	Leu Ser Asp
370	375	380
Leu Ser Thr Asp Asn Tyr Ile	Glu Leu Glu Lys Ile Arg	Lys Asp Ile
385	390	395
Thr Arg Gln Leu Lys Asp Glu	Ile Leu Val Thr Pro Lys	Leu Lys Leu
405	410	415
Val Lys Lys Gly Ser Leu Pro	Gln Ser Glu Gly Lys Ala	Val Arg Val
420	425	430
Lys Asp Leu Arg Asn Asn Lys		
435		

<210> 5319

<211> 279

<212> PRT

<213> B.fragilis

<400> 5319

Lys Thr Met Ala Ile Ala Tyr Asp Gly Ile Asn Tyr Phe Pro Val Gly	1	5	10	15
Val Asn Phe Met Glu Glu Asn Ala Met Glu Val Ile Glu Ala Lys Tyr	20	25	30	
Gly Ile Lys Gly Ser Ala Ile Val Leu Lys Leu Leu Cys Lys Ile Tyr	35	40	45	
Lys Glu Gly Tyr Phe Ile Arg Trp Asp Glu Glu Gln Cys Leu Ile Phe	50	55	60	
Ala Asn Lys Ala Gly Arg Glu Val Gln Ala Ala Glu Val Gln Gly Ile	65	70	75	80
Ile Glu Ile Leu Phe Ile Lys Gly Ile Leu Asp Arg Asn Ser Tyr Leu	85	90	95	
Ala Asn Gly Ile Leu Thr Ser Ala Asn Ile Gln Lys Ile Trp Met Glu	100	105	110	
Ala Thr Lys Arg Arg Lys Arg Asp Leu Lys Ala Leu Pro Tyr Leu Leu	115	120	125	
Val Asn Asp Leu Thr Gln Gln Glu Thr Glu Ala Pro Glu Gly Glu Asn	130	135	140	
Val Thr Ile Ser Pro Gly Asn Val Val His Asp Val Ala Val Asn Ala	145	150	155	160
Lys Asn Ala Cys Asn Ser Gly Gln Ser Lys Val Lys Glu Lys Lys Ala	165	170	175	
Glu Glu Asn Lys Glu Leu Pro Pro Ser Ala Pro Pro Lys Gly Lys Glu	180	185	190	
Lys Glu Trp Glu Glu Val Ser Ala Pro Leu Pro Ile Pro Gly Tyr Ala	195	200	205	
Phe Asn Thr Met Thr His Asn Tyr Pro Gly Leu Thr Asp Thr Leu Lys	210	215	220	
Arg Leu Gly Ile Thr Glu Val Gly Glu Val Asn Ala Ile Leu Arg Leu				

2160

225 230 235 240
 Ser Asp Tyr Gly Arg Lys Gly Thr Arg Val Trp Gln Leu Ile Ala Asn
 245 250 255
 Thr Cys Trp Ser Asp Ile Gly Ala Lys Gly Arg Tyr Leu Ile Ala Ala
 260 265 270
 Leu Asn Lys Ala Lys Arg Lys
 275

<210> 5320
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 5320
 Gly Arg Asn Phe Leu Ile Glu Ala Ile Asn Gln Asp Tyr Tyr His Val
 1 5 10 15
 His Gly Ala Leu Ala His Asn Phe Asp Thr Thr Leu Pro Glu Ile Gln
 20 25 30
 Ala Lys Gln Val Lys Glu Thr Leu Lys Asp Pro Tyr Ile Phe Asp Met
 35 40 45
 Leu Thr Phe Thr Asp Glu Tyr Asp Glu Arg Asp Val Glu Leu Gly Leu
 50 55 60
 Val Lys His Ile Glu Lys Phe Leu Val Glu Met Gly Ala Gly Phe Ala
 65 70 75 80
 Phe Met Gly Arg Gln Tyr Tyr Ile Glu Val Ser Gly Asn Asp Phe Tyr
 85 90 95
 Ile Asp Ile Leu Met Cys Asn Ala Phe Met His Arg Tyr Leu Val Val
 100 105 110
 Glu Leu Lys Arg Gly Glu Phe Gln Pro Glu Tyr Ile Gly Lys Leu Asn
 115 120 125
 Phe Tyr Cys Ser Val Val Asp Asp Ile Leu Cys Arg Ala Gly Asp Asn
 130 135 140
 Gln Thr Ile Gly Leu Leu Leu Cys Gln Asn Lys Asn Arg Ile Met Ala
 145 150 155 160
 Glu Tyr Ala Leu Arg Asp Val His Lys Pro Ile Gly Ile Ser Asp Tyr
 165 170 175
 Glu Leu Gly Lys Ala Leu Pro Lys Asp Ile Lys Ser Gly Leu Pro Ser
 180 185 190
 Ile Gly Glu Leu Glu Ser Lys Leu Ser Arg Glu Leu Glu Asp Asn Thr
 195 200 205
 Gln Ser Leu
 210

<210> 5321
 <211> 640
 <212> PRT
 <213> B.fragilis

<400> 5321
 Ile Tyr Phe Tyr Ile Thr Met Asn Ile Arg Phe Tyr Tyr Lys Tyr Leu
 1 5 10 15
 Ser Ser Arg Val Ala Ser Lys Trp Leu Ile Leu Ala Val Asp Val Leu
 20 25 30
 Leu Val Ile Phe Ser Met Phe Leu Ala Ser Leu Leu Gln Ile Gly Leu
 35 40 45
 Ser Ala Leu Val Phe Glu Phe Ser Leu Trp Val Trp Thr Thr Leu Phe
 50 55 60
 Cys Val Ile Phe Asn Val Cys Phe Phe His Leu Asn Arg Thr Tyr Val
 65 70 75 80

Gly	Val	Ile	Arg	Tyr	Ser	Ser	Phe	Ile	Asp	Ile	Ser	Arg	Ile	Phe	Ile
				85					90					95	
Ser	Leu	Thr	Leu	Gly	Tyr	Leu	Val	Thr	Cys	Val	Gly	Asn	Leu	Leu	Trp
			100					105					110		
Met	Gly	Trp	Ser	Gly	Arg	Glu	Val	Leu	Pro	Ile	Ser	Val	Ile	Leu	Thr
		115					120					125			
Ala	Tyr	Ile	Val	Asn	Phe	Ser	Leu	Met	Val	Cys	Leu	Arg	Ile	Leu	Val
	130					135					140				
Lys	Met	Ile	His	Glu	Leu	Met	Thr	Phe	Asp	Arg	Arg	His	Ser	Ile	Arg
145					150					155					160
Val	Phe	Val	Tyr	Gly	Ser	Lys	Gly	Ser	Gly	Ile	Asn	Ile	Ala	Lys	Ser
			165						170					175	
Leu	Arg	Val	Ser	Arg	Ser	Asn	His	Phe	Arg	Leu	Lys	Gly	Phe	Ile	Ser
		180						185					190		
Asp	Asp	Thr	Gly	Phe	Ile	Gly	Lys	Gln	Thr	Met	Gly	Cys	Arg	Val	Tyr
	195						200					205			
Ala	Asn	Asn	Glu	Ser	Leu	Phe	Asp	Ile	Leu	Glu	Glu	Glu	Arg	Ile	Glu
	210					215					220				
Ala	Ile	Ile	Val	Ser	Ser	Glu	Lys	Val	His	Arg	Leu	Glu	Thr	Ser	Gly
225					230					235					240
Met	Ile	Asp	Arg	Leu	Ile	Ala	Glu	Asp	Ile	Arg	Ile	Leu	Thr	Val	Pro
			245						250					255	
Pro	Phe	Asn	Asp	Leu	Gly	Lys	Glu	Gly	Met	Gln	Ile	Lys	Asp	Ile	Gln
		260						265					270		
Ile	Glu	Asp	Leu	Leu	Gln	Arg	Asp	Pro	Ile	His	Val	Asp	Ile	Arg	Lys
		275					280					285			
Ile	Ser	Ser	His	Ile	Glu	Gly	Lys	Arg	Ile	Met	Ile	Thr	Gly	Ala	Ala
	290					295					300				
Gly	Ser	Ile	Gly	Arg	Glu	Met	Val	Arg	Gln	Ile	Ala	Gly	Leu	Asn	Pro
305					310					315					320
Tyr	Lys	Leu	Ile	Leu	Val	Asp	Gln	Ala	Glu	Ser	Pro	Leu	His	Asn	Val
			325						330					335	
Gln	Leu	Glu	Leu	Leu	Asp	Asn	Trp	Arg	Asp	Ile	Asp	Ala	Lys	Met	Leu
		340						345					350		
Val	Ala	Asp	Val	Thr	Asn	Gln	Thr	Arg	Met	Glu	Ser	Ile	Phe	Lys	Asp
		355					360					365			
Tyr	Arg	Pro	Gln	Tyr	Val	Phe	His	Ala	Ala	Ala	Tyr	Lys	His	Val	Pro
	370					375					380				
Met	Met	Glu	Asp	Asn	Val	Ser	Glu	Ala	Ile	Gln	Val	Asn	Val	Leu	Gly
385				390						395					400
Thr	Arg	Ile	Met	Ala	Asp	Leu	Ala	Val	Lys	Tyr	Gly	Val	Glu	Lys	Phe
			405						410				415		
Val	Met	Val	Ser	Thr	Asp	Lys	Ala	Val	Asn	Pro	Thr	Asn	Val	Met	Gly
		420						425					430		
Cys	Ser	Lys	Arg	Leu	Ala	Glu	Ile	Tyr	Val	Gln	Ser	Leu	Ala	His	Gln
		435					440					445			
Leu	Ser	Lys	Tyr	Ala	Asn	Asp	Gly	Ala	Leu	Val	Lys	Phe	Ile	Thr	Thr
	450					455					460				
Arg	Phe	Gly	Asn	Val	Leu	Gly	Ser	Asn	Gly	Ser	Val	Ile	Pro	Arg	Phe
465				470						475					480
Lys	Gln	Gln	Ile	Glu	Lys	Gly	Gly	Pro	Val	Thr	Val	Thr	His	Pro	Gln
			485						490					495	
Val	Ile	Arg	Tyr	Phe	Met	Thr	Ile	Pro	Glu	Ala	Cys	Gln	Leu	Val	Leu
		500						505					510		
Glu	Ala	Gly	Ser	Met	Gly	Asn	Gly	Glu	Ile	Tyr	Ile	Phe	Asp	Met	
		515					520				525				
Gly	Asn	Pro	Val	Lys	Ile	Val	Asp	Leu	Ala	Arg	Arg	Met	Ile	Tyr	Leu
	530					535					540				
Ser	Gly	Gln	Lys	Asn	Ile	Lys	Ile	Glu	Phe	Thr	Gly	Leu	Arg	His	Gly

545 550 555 560
 Glu Lys Leu Tyr Glu Glu Leu Leu Asn Val Lys Glu Phe Thr Cys Pro
 565 570 575
 Thr Tyr His Glu Lys Ile Met Ile Ala Lys Val Arg Glu Tyr Asp Tyr
 580 585 590
 Glu Glu Val Lys Gln Glu Ile Gln Lys Leu Ile Asp Leu Ser Tyr Thr
 595 600 605
 Ser Asp Thr Met Gly Ile Val Ala Ser Met Lys Lys Ile Val Pro Glu
 610 615 620
 Phe Val Ser Lys Asn Ser Glu Phe Glu Ile Leu Asp Lys Ala Ser Phe
 625 630 635 640

<210> 5322
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 5322
 Ile Ile Ser Leu Asn Asn Tyr Ile Ser Tyr Asp Val Val Ser Asn Ser
 1 5 10 15
 Phe Trp Ile Lys Tyr Phe Asn Leu Tyr Ile Lys Asn Met Tyr Gln Tyr
 20 25 30
 Ala Phe Ser Pro Asn Lys Ser His Leu Ile Tyr Ser Thr Ile Ala Phe
 35 40 45
 Gly Asp Glu Pro Glu Ile Ile Ile Met Gly Lys Gly Gln Ile Thr Asn
 50 55 60
 Asp Asp Glu Ile Gln Met Tyr Pro Ser Ile Asn Asp Asn Gly Asp Val
 65 70 75 80
 Glu Ile Leu Phe Ile Lys Gln Glu Ile Lys Lys Leu Ser Ile Leu Trp
 85 90 95
 Val Gly Cys Phe Arg
 100

<210> 5323
 <211> 705
 <212> PRT
 <213> B.fragilis

<400> 5323
 Phe Thr Glu Tyr Ser Asn Leu Thr Gln Thr Asp Lys His Arg Leu Met
 1 5 10 15
 Lys Arg Asn Val Ser Leu Leu Lys Tyr Ala Leu Leu Ile Ala Leu Cys
 20 25 30
 Cys Val Ala Cys Val Asn Glu Lys Asp Leu Tyr Glu Pro Ser Gly Glu
 35 40 45
 Asp Pro Gly Glu Thr Glu Glu Leu Asp Leu Ser Phe Lys Phe Ala Leu
 50 55 60
 Arg Ala Asp Lys Gln Ile His Ile Ser Val Thr Arg Ala Asp Gly Lys
 65 70 75 80
 Ala Ala Glu Gly Ile Gly Val Gly Val Tyr Leu Gln Gln Pro Tyr Glu
 85 90 95
 Glu Asp Gly Ile Ile Ser Gly Lys Pro Leu Tyr Met Gly Tyr Thr Asp
 100 105 110
 Gly Asn Gly Gln Ile Asp Ala Thr Ile Ser Val Pro Ala Asn Ser Asp
 115 120 125
 Lys Leu Tyr Val Ala Ser Leu Thr Ala Gly Tyr Pro Gly Val Gln Glu
 130 135 140
 Met Asp Val Gln Pro Ser Met Thr Cys Asn Leu Thr Ala Thr Ala Phe
 145 150 155 160

Gln Ile Lys Thr Ala Thr Thr Arg Met Val Ala Thr Arg Ser Glu Thr
 165 170 175
 Gly Leu Asp Val Pro Val Gly Gln Lys Leu Ser Asn Leu Tyr Glu Leu
 180 185 190
 Tyr Ser Pro Tyr Thr Asp Ser Glu Ile Gly Lys Asp Gly Ile Pro Leu
 195 200 205
 Leu Asn Ala Ser Pro Leu Val Thr Lys Glu Glu Leu Ser Ala Lys Phe
 210 215 220
 Leu Asn Leu Met Asn Ser Trp Tyr Pro Glu Gln Lys Asn Val Gln Asp
 225 230 235 240
 Val Asp Leu Lys Lys Ser Ser Asp Leu Val Val Thr Asp Glu Leu Gly
 245 250 255
 Ala Glu Val Trp Ala Thr Tyr Val Gly Asp Gly Gly Phe Tyr Val Asn
 260 265 270
 Asn Ala Thr Val Tyr Asn Val Leu Ala Tyr Tyr Ser Tyr Gln Glu Gly
 275 280 285
 Glu Leu Gly Arg Arg Glu Asp Ile Gln Gly His Arg Met Thr Leu Leu
 290 295 300
 Leu Pro Asn Thr His Gln Gln Lys Cys Pro Ser Gly Leu Lys Val Gln
 305 310 315 320
 Leu Leu Tyr Trp Asp Gly Lys Gln Tyr Ser Lys Val Phe Pro Lys Gly
 325 330 335
 Ala Arg Ile Gly Phe Ala Val Ala Arg Asp Gly Leu Asn Ile Ala Asn
 340 345 350
 Val Asn Ala Ala Asn Gly Gly Val Asn Ser Lys Ser Ser Tyr Lys Phe
 355 360 365
 Lys Asn Gln Thr Phe Pro Asn Gly Asp Val Asn Gly Phe Tyr Tyr Ser
 370 375 380
 Thr Pro Ser Leu Asn Ala Thr Lys Arg Thr Asn Ala Val Ile Arg Asn
 385 390 395 400
 Val Pro Asp Tyr Asn Cys Cys Ile Met Gly Phe Asp Ile Arg Pro Tyr
 405 410 415
 Asp Asp Pro Lys Ala Asp Tyr Asp Phe Asn Asp Val Met Ile Lys Leu
 420 425 430
 Thr Ala Ser Pro Val Ser Ala Ile Lys Pro Glu Glu Asp Ile Pro Val
 435 440 445
 Ile Asp Glu Phe Thr Pro Ser Glu Ala Val Tyr Gly Thr Leu Ala Phe
 450 455 460
 Glu Asp Gln Trp Pro Lys Met Gly Asp Tyr Asp Phe Asn Asp Phe Val
 465 470 475 480
 Met Asn Tyr Ser Tyr Glu Leu Glu Lys Gly Asp Asn Asn Met Ile Thr
 485 490 495
 Ala Leu Lys Leu Thr Phe Thr Pro Ile Ala Lys Gly Ala Ala Ser Trp
 500 505 510
 Thr His Ile Gly Val Gly Ile Glu Leu Pro Leu Ser Ala Asp Asn Ile
 515 520 525
 Asp Lys Ala Lys Ser Glu Gly Ala Thr Leu Glu Glu Gly Asn Asp Arg
 530 535 540
 Ala Thr Phe Ile Val Trp Asn Asp Val Asn Thr Ala Phe Gly Thr Thr
 545 550 555 560
 Glu Gly Tyr Val Asn Thr Glu Gly Ala Val Val Gly Val Ser Ala Ile
 565 570 575
 Pro Val Glu Val Thr Val Arg Leu Lys Thr Pro Val Ser Ser Leu Leu
 580 585 590
 Thr Gln Lys Phe Asn Pro Phe Ile Phe Val Asn Ser Arg Gln Arg Glu
 595 600 605
 Ile His Leu Val Asp Tyr Lys Pro Thr Lys His Ala Asp Thr Ser Leu
 610 615 620
 Phe Gly Thr Glu Asn Asp Arg Ser Asp Pro Gly Ala Glu Val Tyr Tyr

Leu	Phe	Thr	Phe	Ile	Leu	Gly	Asp	Ser	Trp	Leu	Leu	Val	Gly	Lys	Ile
			340					345					350		
Val	Ser	Ile	Leu	Ile	Phe	Pro	Tyr	Val	Leu	Leu	Phe	Cys	Ser	Asn	Cys
		355					360					365			
Val	Ser	Tyr	Cys	Leu	Val	Val	Ile	Gly	Lys	Gln	Lys	Ile	Asn	Leu	Tyr
		370					375					380			
Leu	Ser	Leu	Leu	Tyr	Leu	Met	Leu	Ile	Val	Ala	Ser	Val	Val	Ser	Gly
385					390					395					400
Phe	Tyr	Val	Phe	Ser	Asp	Phe	Val	Ser	Val	Val	Ile	Cys	Phe	Ala	Val
				405					410					415	
Ala	Leu	Ile	Val	Phe	Asn	Leu	Leu	Asn	Leu	Leu	Val	Ile	Phe	Tyr	Tyr
			420					425					430		
Leu	Arg	Lys	Asp	Phe	Gly	Arg	Phe	Val	Arg	Phe	Ile	Gly	Ile	Tyr	Leu
		435					440					445			
Leu	Leu	Ile	Tyr	Leu	Gly	Leu	Ile	Leu	Ile	Lys	Tyr	Leu			
		450				455					460				

<210> 5325

<211> 856

<212> PRT

<213> B.fragilis

<400> 5325

Ser	Glu	Tyr	Leu	Met	Arg	Arg	Phe	Ile	Thr	Leu	Phe	Phe	Leu	Ile	Phe
1				5					10					15	
Thr	Leu	Ser	Gly	Val	Ala	Val	Ala	Gln	Gln	Met	Ser	Asp	Asp	Gln	Val
			20					25					30		
Val	Gln	Tyr	Val	Lys	Asp	Ala	Gln	Lys	Met	Gly	Lys	Thr	Gln	Lys	Gln
		35					40					45			
Ile	Thr	Thr	Glu	Leu	Met	Arg	Arg	Gly	Val	Thr	Lys	Glu	Gln	Val	Glu
	50					55					60				
Arg	Ile	Gln	Glu	Lys	Tyr	Glu	Asn	Gly	Ser	Gly	Ser	Thr	Gly	Thr	Gln
65					70					75					80
Asn	Asn	Gln	Asn	Ser	Thr	Arg	Ser	Arg	Thr	Arg	Thr	Gln	Gln	Asn	Asp
				85					90					95	
Glu	Ser	Asp	Tyr	Ser	Asn	Arg	Ser	Gln	Lys	Asn	Leu	Lys	Asp	Gln	Lys
			100					105					110		
Asn	Gln	Lys	Asn	Gln	Lys	Asn	Gln	Lys	Asn	Ile	Lys	Gly	Leu	Arg	Gln
		115					120					125			
Ser	Asn	Asn	Gln	Lys	Asn	Lys	Arg	Gly	Met	Gly	Asp	Glu	Asn	Leu	Glu
	130					135					140				
Met	Thr	Asp	Glu	Asp	Met	Met	Asn	Glu	Glu	Asp	Trp	Ser	Asp	Glu	Tyr
145					150					155					160
Thr	Val	Lys	Pro	Glu	Glu	Asp	Pro	Thr	Gln	Gln	Ile	Phe	Gly	His	Asn
				165					170					175	
Ile	Phe	Thr	Asn	Glu	Asn	Leu	Thr	Phe	Glu	Pro	Asn	Leu	Asn	Ile	Ala
			180					185					190		
Thr	Pro	Val	Ser	Tyr	Arg	Leu	Gly	Pro	Gly	Asp	Glu	Val	Ile	Ile	Asp
		195					200					205			
Val	Trp	Gly	Ala	Ser	Gln	Thr	Thr	Ile	Arg	Gln	Thr	Ile	Ser	Pro	Glu
	210					215					220				
Gly	Ser	Ile	Leu	Val	Asp	Asn	Leu	Gly	Pro	Ile	Tyr	Leu	Ser	Gly	Met
225					230					235					240
Thr	Val	Arg	Glu	Ala	Asn	Asn	Ala	Val	Arg	Arg	Glu	Phe	Ala	Lys	Ile
				245					250					255	
Tyr	Ala	Gly	Ile	Ser	Gly	Pro	Asn	Pro	Asn	Thr	Ser	Val	Asp	Leu	Thr
			260					265					270		
Leu	Gly	Asn	Ile	Arg	Thr	Ile	Gln	Ile	Ser	Ile	Met	Gly	Glu	Val	Ala

Val	Lys	Ile	Asn	Gly	Ala	Val	Met	Tyr	Pro	Asn	Thr	Val	Leu	Tyr	Lys
	755						760					765			
Lys	Gly	Glu	Ser	Leu	Lys	Tyr	Tyr	Ile	Asn	Gln	Ala	Gly	Gly	Phe	Ala
	770					775						780			
Ser	Leu	Ala	Lys	Lys	Lys	Arg	Ala	Phe	Val	Val	Tyr	Met	Asn	Gly	Thr
785					790					795					800
Val	Ser	Arg	Leu	Arg	Thr	Gly	Asn	Ser	Lys	Ala	Ile	Glu	Pro	Gly	Cys
			805						810					815	
Glu	Ile	Ile	Val	Pro	Ser	Lys	Asp	Pro	Lys	Lys	Arg	Met	Ser	Ala	Ala
			820					825					830		
Glu	Ile	Ile	Gly	Met	Gly	Thr	Ser	Ala	Ala	Ser	Leu	Ala	Thr	Met	Ile
		835					840					845			
Ala	Thr	Met	Val	Asn	Leu	Phe	Lys								
	850					855									

<210> 5326

<211> 965

<212> PRT

<213> B.fragilis

<400> 5326

Met	Asn	Phe	Gln	Asp	Leu	His	Ile	Leu	Gly	Glu	Leu	Lys	Glu	Glu	Leu
1			5						10					15	
Leu	Tyr	Arg	Ile	Leu	Tyr	Ser	Thr	Asp	Ala	Ser	Ala	Tyr	Arg	Glu	Met
		20						25					30		
Pro	Ile	Ala	Val	Ala	Tyr	Pro	Lys	Asp	Ser	Ser	Asp	Val	Gln	Lys	Ile
		35					40					45			
Ser	Asn	Phe	Ala	Lys	Lys	Asn	Gln	Ile	Asn	Leu	Ile	Pro	Arg	Ala	Gly
	50					55					60				
Gly	Thr	Ser	Leu	Ala	Gly	Gln	Val	Val	Gly	Lys	Gly	Leu	Val	Val	Asp
65					70					75					80
Ile	Ser	Lys	Tyr	Met	Asn	His	Ile	Leu	Glu	Ile	Asn	Gln	Glu	Glu	Arg
			85						90					95	
Trp	Val	Arg	Val	Gln	Pro	Gly	Val	Val	Leu	Asp	Glu	Leu	Asn	Leu	Tyr
		100						105					110		
Cys	Lys	Pro	Tyr	Gly	Leu	Phe	Phe	Gly	Pro	Glu	Thr	Ser	Thr	Ser	Asn
	115						120					125			
Arg	Cys	Cys	Leu	Gly	Gly	Met	Val	Gly	Asn	Asn	Ser	Cys	Gly	Ser	His
	130					135					140				
Ser	Leu	Val	Tyr	Gly	Ser	Thr	Arg	Asp	His	Leu	Leu	Glu	Ala	Asn	Val
145					150					155					160
Val	Leu	Ser	Asp	Gly	Ser	Glu	Val	Val	Leu	Lys	Gly	Met	Thr	Ser	Lys
			165						170					175	
Glu	Ile	Asn	Glu	Lys	Cys	Lys	Leu	Asp	Ser	Leu	Glu	Gly	Arg	Ile	Tyr
		180						185					190		
Ser	Gln	Ile	Ile	Thr	Leu	Leu	Ser	Asn	Phe	Glu	Asn	Gln	Lys	Glu	Ile
		195					200					205			
Val	Asp	Asn	Tyr	Pro	Asp	Val	Ser	Leu	Arg	Arg	Arg	Asn	Ser	Gly	Tyr
	210					215						220			
Ala	Ile	Asp	Glu	Leu	Leu	Arg	Ser	Asn	Tyr	Phe	Asp	Lys	Asn	Cys	Ser
225					230					235					240
Glu	Ser	Phe	Asn	Leu	Cys	Lys	Leu	Leu	Ala	Gly	Ser	Glu	Gly	Thr	Leu
			245						250					255	
Ala	Leu	Ile	Thr	Glu	Leu	Lys	Leu	Lys	Leu	Val	Pro	Leu	Pro	Pro	Thr
		260						265						270	
Glu	Lys	Ala	Val	Ile	Cys	Val	His	Cys	Ser	Thr	Leu	Glu	Glu	Ser	Phe
	275						280					285			
Ala	Ala	Asn	Leu	Val	Ala	Leu	Arg	His	Ala	Pro	Val	Ala	Ile	Glu	Leu
	290					295					300				

Met Asp Ser Thr Ile Leu Glu Leu Ser Lys Gln Asn Ile Ser Gln Asn
 305 310 315 320
 Lys Asn Arg Phe Phe Ile Gln Gly Asp Pro Ala Ala Ile Leu Ile Ile
 325 330 335
 Glu Leu Ala Glu Gln Thr Arg Gly Glu Val Asp Lys Lys Ala Asn Glu
 340 345 350
 Ile Ile Asp Asp Leu Lys Ile His His Tyr Gly Thr His Tyr Pro Leu
 355 360 365
 Val Tyr Gly Lys Asp Ile Ser Arg Val Trp Ala Leu Arg Lys Ser Gly
 370 375 380
 Leu Gly Leu Leu Ser Gly Met Pro Gly Ser Ala Lys Pro Val Ser Leu
 385 390 395 400
 Ile Glu Asp Thr Ala Ile Ala Pro Glu Arg Leu Ala Ala Phe Ile Ala
 405 410 415
 Asp Leu Lys Val Met Leu Ser Lys Tyr Gly Leu Asp Cys Ile Tyr His
 420 425 430
 Gly His Ile Ser Thr Gly Glu Leu His Leu Arg Pro Val Leu Asn Leu
 435 440 445
 Lys Lys Glu Lys Asp Lys Lys Leu Phe Arg Leu Val Ala Thr Glu Thr
 450 455 460
 Ala Glu Leu Val Arg Lys His Arg Gly Ser Leu Ser Gly Glu His Gly
 465 470 475 480
 Asp Gly Arg Leu Arg Gly Glu Phe Ile Pro Leu Leu Leu Gly Asp Lys
 485 490 495
 Ile Tyr Ser Phe Leu Arg Asp Ile Lys Glu Thr Trp Asp Leu Pro His
 500 505 510
 Ile Phe Asn Ile Gly Lys Ile Val Asp Thr Pro Phe Met Asp Ile Asn
 515 520 525
 Leu Arg Tyr Glu Gln His Asn Leu Gly Val Lys Thr Tyr Phe Asp Phe
 530 535 540
 Ser Lys Gln Lys Gly Trp Leu Cys Ala Ile Glu Gln Cys Asn Gly Ser
 545 550 555 560
 Gly Asp Cys Arg Lys Ser Asn Leu Phe Gly Gly Thr Met Cys Pro Thr
 565 570 575
 Tyr Arg Ala Thr Arg Glu Glu Lys Asn Thr Thr Arg Ala Arg Ala Asn
 580 585 590
 Thr Leu Arg Glu Leu Leu Ile His Pro Ala His Asp Arg Ile Phe Ser
 595 600 605
 Gln Pro Glu Ile Leu Glu Val Leu Asp Thr Cys Val Ser Cys Lys Ala
 610 615 620
 Cys Lys Ser Glu Cys Pro Ser Asn Val Asp Met Ala Arg Tyr Lys Ala
 625 630 635 640
 Glu Tyr Leu Gln His His Tyr Asp Glu Thr Phe Val Ser Leu Arg Ser
 645 650 655
 Arg Leu Ile Ala Asn Leu Thr Lys Val Gln Lys Leu Gly Met Val Ala
 660 665 670
 Pro Trp Leu Tyr Asn Ala Phe Val Thr Ala Gln Phe Thr Ser Ser Leu
 675 680 685
 Leu Lys Arg Ile Leu Lys Phe Ala Pro Gln Arg Ser Ile Pro Arg Leu
 690 695 700
 Tyr Lys Ile Thr Leu Lys Ser Trp Leu Tyr Asn Asn Pro Asp Met Asn
 705 710 715 720
 Lys Cys Asn Arg Lys Val Tyr Leu Phe Ala Asp Glu Phe Thr Asn Tyr
 725 730 735
 Met Asp Val Glu Ile Gly Ile Lys Phe Ile Lys Leu Leu Arg Thr Leu
 740 745 750
 Gly Tyr Glu Val Ile Ile Pro Lys His Leu Glu Ser Gly Arg Thr Glu
 755 760 765
 Ile Ser Lys Gly Leu Leu Lys Lys Ala Lys Lys Ile Ala Glu Lys Asn


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      770              775              780
Ile Leu Phe Leu Lys Asp Ile Val Thr Glu Glu Ile Pro Leu Val Gly
785              790              795              800
Ile Glu Pro Ser Cys Ile Leu Ser Phe Arg Asp Glu Tyr Pro Asp Leu
      805              810              815
Val Asp Glu Glu Leu Gln Gly Tyr Ala Arg Lys Leu Ser Val Asn Cys
      820              825              830
Leu Leu Tyr Asp Glu Phe Ile Val Arg Glu Met Arg Lys Gly Asn Ile
      835              840              845
Lys Gln Lys Gln Phe Thr Gln Ser Tyr Leu Tyr Ile Lys Leu His Gly
      850              855              860
His Cys His Gln Lys Ser Leu Ala Ser Ile Glu Pro Ser Lys Glu Met
865              870              875              880
Leu Ser Leu Pro Lys Asn Tyr Gln Val Asp Ile Ile Pro Ser Gly Cys
      885              890              895
Cys Gly Met Ala Gly Ala Phe Gly Tyr Glu Lys Glu His Tyr Asp Leu
      900              905              910
Ser Met Gln Ile Gly Glu Gln Val Leu Phe Pro Ala Ile Arg Gln Ala
      915              920              925
Lys Glu Asp Val Cys Ile Ser Ala Pro Gly Thr Ser Cys Arg Gln Gln
      930              935              940
Ile Lys Asp Gly Thr Gly Arg Arg Ala Tyr His Pro Ile Glu Val Leu
945              950              955              960
Tyr Asp Ala Leu Ile
      965

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<210> 5327
<211> 1084
<212> PRT
<213> B.fragilis

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<400> 5327
Ala Thr Leu His His Glu Arg Ala Asp Arg Gln Val Ala Gly Ser Gln
1              5              10              15
Gln Val Leu Ser Ser Asn Met Ser Phe Thr Thr Ser Ile Asn Ile Glu
      20              25              30
Arg Asp Phe Gly Lys Ile Pro His Tyr Ile Val Thr Ala Asn Ala Arg
      35              40              45
Gln Thr Ile Gly Lys Ile Ile Asn His Phe Ala Ser Gly Ile His Ser
      50              55              60
Phe Cys Leu Ile Gly Ser Tyr Gly Thr Gly Lys Ser Ser Phe Ile Leu
65              70              75              80
Ala Leu Glu Asn Cys Leu Cys Gly Lys Thr Val Gly Lys Asn Val Leu
      85              90              95
Leu Ser Gln Arg Gly Gln Phe Asn Ser Phe Glu Gln Phe Ser Phe Ile
      100              105              110
Asn Ile Val Gly Asp Tyr Ala Ser Leu Ala Asn Leu Leu Ala Ser His
      115              120              125
Leu Asn Ala Glu Ser Lys Asn Val Ile Ser Val Leu Asp Asn His Tyr
      130              135              140
Asn Arg Leu Gln Lys Thr Asn Gln Phe Leu Val Ile Val Ile Asp Glu
145              150              155              160
Phe Gly Lys Val Leu Glu His Ala Ala Lys Asn Asn Pro Glu Lys Glu
      165              170              175
Met Tyr Phe Leu Gln Lys Phe Cys Glu Tyr Val Asn Asp Thr Ser Lys
      180              185              190
Asn Ile Leu Phe Leu Thr Thr Leu His Gln Gly Phe Gly Ala Tyr Ala
      195              200              205
Lys Gly Leu Lys Ala Glu Gln Lys Gln Glu Trp Thr Lys Val Lys Gly

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210	215	220
Arg Ile Gln Asp Ile Val Phe Ala Glu Pro Ile Glu Gln Leu Leu Asn		
225	230	235
Leu Thr Ala Thr His Ile Ser Ser Ala Asp Lys Lys Pro Thr Leu Asn		240
	245	250
Thr Asp Lys Ile Tyr Asn Leu Ala Val Ala Ser Lys Phe Ala Ala Ser		255
	260	265
Thr Leu Asp Ala Asn Val Ala Arg Ala Leu Tyr Pro Met Asp Ile Val		270
	275	280
Ser Ala Tyr Val Phe Thr Gln Ala Asn Gln Arg Tyr Gly Gln Asn Glu		285
	290	295
Arg Thr Leu Phe Thr Phe Leu Glu Thr Arg Gly Glu Gly Thr Val Asn		300
305	310	315
Asp Phe Glu Ala Ser Ile Asn Arg Leu Tyr Ser Leu Ala Asp Val His		320
	325	330
Asp Tyr Ile Val Tyr Asn Phe Tyr Ser Tyr Leu Gln Glu Ala His Glu		335
	340	345
Asp Ser Ala Asn Trp Ser Ala Ile Lys Ile Ala Ile Glu Arg Thr Glu		350
	355	360
Gly Leu Asn Ala Asp Ala Thr Thr Ile Thr Asp Ala Ile Lys Ile Val		365
370	375	380
Lys Ala Val Gly Leu Leu Asn Ile Phe Ala Ser Ser Ala Ala Ser Ile		
385	390	395
Asp Lys Gln Phe Leu Ile Val Tyr Ala Ser Tyr Ala Met Asp Val Cys		400
	405	410
Gln Val Gly Ser Val Ile Asp Leu Leu Glu Lys Asn Gln Ile Leu Arg		415
	420	425
Phe Ala Lys Tyr Lys Ser Lys Tyr Ile Leu Phe Glu Gly Thr Asp Val		430
	435	440
Asp Leu Glu Ala Gly Leu Tyr Glu Ala Ala Arg Glu Cys Lys Arg Ser		445
	450	455
Asp Val Ile Ala Glu Lys Val Cys Glu Tyr Phe Asp Asp Lys Ile Ala		460
465	470	475
Leu Ala Asn Ala His Tyr Phe Arg Thr Gly Thr Pro Arg Tyr Phe Gln		480
	485	490
Tyr Cys Leu Thr Ser Ser Pro Ile Glu Tyr Ile Val Ser Gly Glu Thr		495
	500	505
Asp Gly Ile Ile Asn Val Ile Leu Thr Arg Gln Glu Asp Leu Val Ala		510
	515	520
Val Lys Ala Ala Cys Thr Asp Ile Asn Gly Lys Ala Ile Leu Tyr Cys		525
	530	535
Ile Phe Glu Asn Thr Thr Glu Ile Ala Asp His Leu Phe Glu Ile Asp		540
545	550	555
Lys Leu His Trp Val Arg Asp Tyr Tyr Val Ala Asp Glu Asn Asp Lys		560
	565	570
Val Ala Asn Arg Glu Ile Ala Asn Leu Leu Val His Glu Gln Ser Met		575
	580	585
Leu Asn Lys Thr Ile Met Glu Ser Leu Phe Ser Asp Asn Val Thr Trp		590
	595	600
Ile Phe Asn Gly Glu Ile Leu Ala Ser Ile Thr Ser Arg Lys Met Leu		605
	610	615
Ala Gln Gln Leu Ser Thr Ile Cys Asp Ser Val Tyr Tyr Ala Thr Pro		620
625	630	635
Ile Tyr Arg Phe Glu Leu Ile Asn Lys His Arg Pro Thr Gly Asn Met		640
	645	650
Ser Leu Ala Arg Gln Ser Tyr Leu Gln Ala Leu Leu Asp His Ser Ser		655
	660	665
Glu Pro Tyr Leu Gly Phe Glu Arg Asp Lys Tyr Pro Pro Glu Lys Ser		670
	675	680
		685

Leu Tyr Leu Thr Leu Leu Lys Asn Thr Gly Ile His Thr Thr Ala Gly
 690 695 700
 Leu Gly Ser Pro Thr Glu Pro Ser Phe Gln Pro Leu Trp Asp Ala Cys
 705 710 715 720
 Glu Asn Phe Leu Arg Ser Thr Ile Gly Lys Pro His Lys Leu Gly Glu
 725 730 735
 Leu Phe Thr Leu Leu Glu Ala Ala Pro Phe Arg Leu Lys Gln Gly Leu
 740 745 750
 Leu Tyr Cys Trp Ile Pro Thr Tyr Leu Ile Ile Lys Arg Asp Asp Phe
 755 760 765
 Ala Leu Tyr Asn Ser Asp Gly Thr Tyr Val Pro Tyr Ile Asn Lys Glu
 770 775 780
 Val Leu Asp Leu Ile Leu Arg Ser Pro Asn Gly Phe Leu Ile Lys Ala
 785 790 795 800
 Phe Ala Val Asp Gly Val Arg Arg Thr Phe Phe Asp Lys Tyr Arg Glu
 805 810 815
 Ala Ile Asn Met Gly Ser Ser Glu Leu Ser Thr Gln Ser Phe Ile Glu
 820 825 830
 Thr Ile Arg Pro Phe Leu Thr Phe Tyr Lys Lys Leu Asn Ser Tyr Ala
 835 840 845
 Arg Arg Thr Lys Asp Ile Ser Pro Asn Ala Arg Lys Phe Arg Asp Val
 850 855 860
 Ile Ala Lys Ala Thr Asp Pro Glu Lys Thr Phe Phe Glu Val Leu Pro
 865 870 875 880
 Asp Glu Leu Gly Phe Lys Glu Ile Thr Leu Ser Gln Asn Pro Glu Ala
 885 890 895
 Ile Glu Ser Phe Val Ala Val Ile Gln Glu Ala Ile Arg Glu Leu Arg
 900 905 910
 Asn Cys Tyr Ser Glu Leu Val Gly Asn Ile Glu Gln Tyr Leu Leu Lys
 915 920 925
 Thr Leu Arg Leu Glu Glu Val Gly Phe Ser Asp Tyr His His Leu Ile
 930 935 940
 Ala Glu Arg Tyr Lys Ser Val Lys Thr Glu Leu Met Pro Val Asn Met
 945 950 955 960
 Arg Asn Phe Gln Ala Arg Leu Val Gly Asn Tyr Asp Asp Lys Thr Ala
 965 970 975
 Trp Ile Glu Ala Val Ser Tyr Val Ala Leu Asn Lys Pro Leu Thr Glu
 980 985 990
 Ile Arg Asp Thr Asp Lys Ser Phe Leu Leu Ala Thr Leu Lys Asp Met
 995 1000 1005
 Leu Phe Gln Leu Asp Asp Tyr Val Glu Met His Lys Thr Ala Ser Glu
 1010 1015 1020
 Asp Val Ile Arg Leu His Ile Thr Gln Asn Lys Ser Lys Ala Val Thr
 1025 1030 1035 1040
 Thr Gln Val Ile Leu Ser Glu Ala Met Arg Gln Glu Val Asn Ser Leu
 1045 1050 1055
 Glu Asn Lys Leu Glu Ser Ile Leu Ser Gly Asp Asn Ser Leu Asp Val
 1060 1065 1070
 Ala Ala Leu Ile Ala Ile Leu Lys Lys Lys Leu Lys
 1075 1080

<210> 5328

<211> 88

<212> PRT

<213> B.fragilis

<400> 5328

Phe Tyr Ser His Cys Val Asp Gln His Cys Lys Gly Glu His Leu Gln
 1 5 10 15

Glu Asp Asp Lys Arg Lys Gln Gly Ile Arg Ile Lys Leu Tyr Arg Ile
 20 25 30
 Ser Tyr Asn His His Ile Ile Ser Ala Ile Thr Tyr Phe Phe Leu Tyr
 35 40 45
 Ile Tyr Phe Thr Tyr Ser Ala Ile Val Arg Leu Phe Ile Leu Tyr Pro
 50 55 60
 Phe Asn Glu Ile Ser Pro Val Leu Tyr Leu Ala Trp His Lys Thr Gly
 65 70 75 80
 Asp Glu Thr Lys Ile Tyr Thr His
 85

<210> 5329
 <211> 143
 <212> PRT
 <213> B.fragilis

<400> 5329
 Lys Asn Gly Gln Asn Leu Gln Ser Asp Gly Ser Met Ser Phe Trp Asn
 1 5 10 15
 Glu Ala Asn Val Ile Leu Trp Ile Ser Arg Asn Ser Leu Lys Ile Ser
 20 25 30
 Leu Ala Asp Ile Glu Ser Ser Pro Tyr Ile Ser Lys Gln Leu Leu Arg
 35 40 45
 His Thr Leu Glu His Leu Gln Glu Leu Asp Phe Ile Glu Ser Thr Gly
 50 55 60
 Arg Ala Ser Gly Leu Arg Tyr Ile Leu His Lys Ser Lys Ile Gln Thr
 65 70 75 80
 Thr Gly Glu Lys Ile Lys Tyr Ser Gln Leu Lys Arg Gln Gly Lys Ala
 85 90 95
 Lys Gln Arg Glu Ala Val Ile Arg Tyr Ile Asn Thr Val Gly Thr Ile
 100 105 110
 Thr Asn Ala Glu Ala Arg Glu Ile Leu Asn Leu Thr Glu Thr Ser Gln
 115 120 125
 Ser Tyr Val Pro Arg Cys Tyr Pro Asn Tyr Gly Val Lys Asp Ile
 130 135 140

<210> 5330
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 5330
 Met Phe Thr Asn Leu Ile Lys Arg Val Ile Met Lys Tyr Ala Phe Ser
 1 5 10 15
 Gly His Glu Ser Phe Gln Cys Lys Gly Leu Trp Leu Lys Lys Gly Tyr
 20 25 30
 Asp Tyr Ala Lys Ala Gly Leu Ser Phe Thr Asp Asp Tyr Ala Val Val
 35 40 45
 Glu Leu Gly Val Gly Lys Asn Met Val Ala Ser Ile Arg Tyr Trp Leu
 50 55 60
 Arg Ala Phe Gly Ile Thr Asn Asp Asn Gly Val Pro Thr Glu Ile Gly
 65 70 75 80
 Lys Tyr Leu Leu Asp Asp Asn Gly Ala Asp Pro Tyr Ile Glu Asp Thr
 85 90 95
 Thr Thr Leu Trp Leu Leu His Tyr Met Leu Val Thr Ser Arg Val Ala
 100 105 110
 Thr Leu Tyr Asn Ile Val Phe Thr Glu Tyr Asn Lys Thr Arg Lys Glu
 115 120 125
 Phe Thr Lys Ala Asp Leu Ala Asn Ala Val Arg Arg Met Phe Ala Asp

130		135		140
Lys Cys Phe Asp Ser Thr Pro Tyr Asn Glu Lys Thr Val Trp Arg Asp				
145		150		155
Ile Asp Thr Met Leu Lys Asn Tyr Val Thr Pro Asp Ser Ile Lys Ala				160
		165		170
Cys Asp Asp Phe Ser Ala Leu Leu Ile Asp Leu Lys Leu Ile Gly Lys				175
		180		185
Thr Gly His Glu Asp Tyr Thr Phe Asn Cys Ser Ala Arg Ala Lys Met				190
		195		200
Glu Pro Leu Val Phe Leu Phe Ala Val Leu Asp Ile Thr Gln Gly Lys				205
		210		215
Gln Gln Val Ile Glu Phe Glu Val Leu Leu Arg Leu Ala Asn Ile Phe				220
		225		230
Gly Met Ser Val Asn Glu Leu Tyr Asp Val Phe Asp Gln Leu His Thr				235
		245		250
Ile Asp Pro His Ile Thr Phe Cys Asn Thr Ala Gly Glu Gln Leu Phe				255
		260		265
Thr Met Lys Glu Arg Ile Asp Lys Trp Gln Val Leu Asn Lys Tyr Tyr				270
		275		280
Gln Ala Thr				285
		290		

<210> 5331

<211> 109

<212> PRT

<213> B.fragilis

<400> 5331

Lys Asn Ala Asn Thr Lys Thr Gln Pro Pro Ile Thr Glu Pro Ile Lys				
1		5		10
Glu Thr Arg Gly Arg Lys Ala Gly Ala Gln Ile Pro Gly Ile Ile Ser				15
		20		25
Asn Asn Glu Gly Val Ile Lys Ala Leu Ile Glu Ser Tyr Ile Leu Asp				30
		35		40
Ala Lys Glu Gln Asn Ile Lys Thr Cys Lys Asp Ser Leu Ala Arg Tyr				45
		50		55
Ile Glu Gly Lys Lys Leu Phe Gly Lys Ile Arg Asn Gly Val Phe Lys				60
		65		70
Pro Leu Val Leu Ser Thr Ile Arg Thr Tyr Val Asn Glu Ile Trp Asn				75
		85		90
Lys Met Glu Arg Lys Lys Lys Asn Gln Glu Gly Lys Arg				95
		100		105

<210> 5332

<211> 64

<212> PRT

<213> B.fragilis

<400> 5332

Thr Phe His Lys Val Lys Pro Arg Leu Asn Ile Glu Ser Arg Ile Phe				
1		5		10
Gln Thr Leu His Tyr Tyr Ile Leu Thr Leu Met Phe Arg Ser Lys Gly				15
		20		25
Lys Ile Arg Ile Leu Ser Phe Phe Ser Ser Gly Tyr Glu Asn Pro Gln				30
		35		40
Lys Gly Lys Glu Asn Ile Leu Pro Leu Ile Ile Leu Phe Ser Ile Lys				45
		50		55
				60

<210> 5333

<211> 64
 <212> PRT
 <213> B.fragilis

<400> 5333

Arg	Gly	Asn	Lys	Arg	Glu	Asn	Glu	Thr	Phe	Ser	Leu	Leu	Asn	Cys	Leu
1				5					10					15	
Thr	Leu	Asn	Glu	Ile	Val	Leu	Lys	Lys	Val	Ser	Val	Ser	Ile	Asn	Asp
		20						25					30		
Arg	Leu	Ile	Glu	Arg	Lys	Asp	Arg	Gly	Tyr	Phe	His	Asn	Cys	Lys	Met
		35					40					45			
Phe	Asn	Lys	Lys	Asn	Val	Phe	Leu	His	Gly	Leu	Ile	Tyr	Leu	Ile	Val
	50					55					60				

<210> 5334
 <211> 531
 <212> PRT
 <213> B.fragilis

<400> 5334

Asp	Met	Ser	Lys	Gln	Leu	Leu	Leu	Gly	Asp	Glu	Ala	Ile	Ala	Gln	Ala
1				5					10					15	
Ala	Leu	Asp	Ala	Gly	Leu	Ser	Gly	Val	Tyr	Ala	Tyr	Pro	Gly	Thr	Pro
		20						25					30		
Ser	Thr	Glu	Ile	Thr	Glu	Tyr	Ile	Gln	Met	Ala	Pro	Ile	Thr	Ser	Glu
		35					40					45			
Arg	Asn	Ile	His	Asn	Arg	Trp	Cys	Ala	Asn	Glu	Lys	Thr	Ala	Met	Glu
	50					55				60					
Ala	Ala	Leu	Gly	Met	Ser	Phe	Val	Gly	Lys	Arg	Ala	Leu	Val	Cys	Met
65					70					75				80	
Lys	His	Val	Gly	Met	Asn	Val	Ala	Ala	Asp	Cys	Phe	Ile	Asn	Ser	Ala
				85					90				95		
Ile	Thr	Gly	Val	Lys	Gly	Gly	Leu	Ile	Val	Val	Ala	Ala	Asp	Asp	Pro
		100						105					110		
Ser	Met	His	Ser	Ser	Gln	Asn	Glu	Gln	Asp	Ser	Arg	Phe	Tyr	Gly	Asp
		115				120						125			
Phe	Ser	Leu	Ile	Pro	Met	Tyr	Glu	Pro	Ser	Asn	Gln	Glu	Ala	Tyr	
	130					135					140				
Asp	Met	Val	Tyr	Asn	Gly	Phe	Glu	Phe	Ser	Glu	Lys	Ile	Gly	Glu	Pro
145					150					155					160
Ile	Leu	Met	Arg	Met	Val	Thr	Arg	Leu	Ala	His	Ser	Arg	Ser	Gly	Val
				165					170					175	
Glu	Asn	Lys	Ala	Gln	Lys	Pro	Gln	Asn	Glu	Ile	Ser	Phe	Ser	Glu	Asp
		180						185					190		
Pro	Arg	Gln	Phe	Ile	Leu	Leu	Pro	Gly	Asn	Ala	Arg	Lys	Arg	Tyr	Lys
		195					200					205			
Val	Leu	Leu	Thr	Arg	Gln	Glu	Glu	Phe	Ile	Lys	Ala	Ser	Glu	Glu	Ser
	210					215					220				
Pro	Tyr	Asn	Arg	Tyr	Ile	Asp	Gly	Pro	Asn	Lys	Lys	Thr	Gly	Ile	Val
225					230					235					240
Ala	Cys	Gly	Ile	Gly	Tyr	Asn	Tyr	Leu	Met	Glu	Asn	Tyr	Pro	Glu	Gly
				245					250					255	
Cys	Glu	Tyr	Pro	Val	Leu	Lys	Val	Gly	Gln	Tyr	Pro	Leu	Pro	Lys	Lys
		260						265				270			
Gln	Leu	Met	Gln	Leu	Ile	Asp	Ala	Cys	Asp	Glu	Ile	Leu	Val	Leu	Glu
		275					280					285			
Asp	Gly	Gln	Pro	Phe	Val	Glu	Lys	Gln	Leu	Lys	Gly	Tyr	Leu	Gly	Ile
	290					295					300				
Gly	Leu	Lys	Val	Lys	Gly	Arg	Leu	Asp	Gly	Thr	Leu	Ser	Gln	Asp	Gly

305 310 315 320
 Glu Leu Asn Pro Asp Thr Val Ala Arg Ala Leu Gly Lys Glu Asn Ser
 325 330 335
 Ser Glu Phe Asn Val Pro Asn Ile Val Glu Met Arg Pro Pro Ala Leu
 340 345 350
 Cys Glu Gly Cys Gly His Arg Asp Met Tyr Ile Thr Leu Thr Gln Val
 355 360 365
 Leu Lys Glu Glu Tyr Pro Thr His Lys Val Phe Ser Asp Ile Gly Cys
 370 375 380
 Tyr Thr Leu Gly Ala Asn Ala Pro Phe Asn Ala Ile Asn Ser Cys Val
 385 390 395 400
 Asp Met Gly Ala Ser Ile Thr Met Ala Lys Gly Ala Ser Asp Gly Gly
 405 410 415
 Leu His Pro Ala Val Ala Val Ile Gly Asp Ser Thr Phe Thr His Ser
 420 425 430
 Gly Met Thr Gly Leu Leu Asp Cys Val Asn Glu Asn Ala Asn Val Thr
 435 440 445
 Ile Val Ile Ser Asp Asn Glu Thr Thr Ala Met Thr Gly Gly Gln Asp
 450 455 460
 Ser Ala Gly Thr Gly Arg Leu Glu Ala Ile Cys Ala Gly Leu Gly Val
 465 470 475 480
 Asp Pro Ala His Ile Arg Val Val Val Pro Leu Lys Lys Asn Tyr Glu
 485 490 495
 Glu Met Lys Gln Ile Ile Arg Glu Glu Ile Asn Tyr Lys Gly Val Ser
 500 505 510
 Val Ile Ile Pro Arg Arg Glu Cys Ile Gln Thr Leu Ala Arg Lys Lys
 515 520 525
 Arg Ser Lys
 530

<210> 5335
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 5335
 Ile Leu Ser Asn Arg Asn Thr Phe Asp Pro Thr Tyr Leu Trp Gly Asp
 1 5 10 15
 Asn Leu Ser Ile Asn Pro Leu Asn His Ile Arg Met Lys Gln Lys Lys
 20 25 30
 Arg Pro Ala Ser Gln Thr Glu Ala Met Lys Leu Arg Trp Lys Lys Arg
 35 40 45
 Ile Val Phe Glu Lys Gly Tyr Thr Glu Met Cys Ala Glu Trp Met Ala
 50 55 60
 Glu Arg Leu Glu Ala Leu Thr Asp His Leu Gln Tyr Gly His Ala Ala
 65 70 75 80
 Ile Ala Tyr Gln Lys Gln Asn Gly Asp Phe Arg Leu Val Lys Ala Thr
 85 90 95
 Leu Ile Tyr Tyr Glu Thr Glu Phe His Lys Lys Tyr Asp Pro Thr Gln
 100 105 110
 Ile Glu Gly Ala Val Val Tyr Trp Asn Val Asp Glu Gln Arg Trp Thr
 115 120 125
 Thr Phe Gln Met Glu Asn Phe Met Glu Trp Arg Pro Ile Val
 130 135 140

<210> 5336
 <211> 410
 <212> PRT
 <213> B.fragilis

<400> 5336

```

Ile Leu Pro Lys Leu Leu Ile Tyr Met Lys Gln His Leu Leu Lys Glu
1      5      10      15
Ile Glu Leu Gly Thr Lys Ser Ala Leu Lys Lys Lys Ile Ile Thr
20      25      30
His Tyr Ile Tyr Asn Gly Ser Ser Thr Ile Thr Asp Leu Ser Lys Glu
35      40      45
Leu Asp Leu Ser Val Pro Thr Val Thr Lys Phe Ile Ser Glu Met Cys
50      55      60
Glu Glu Gly Tyr Ile Asn Asp Tyr Gly Lys Leu Glu Thr Ser Gly Gly
65      70      75      80
Arg His Pro Asn Leu Tyr Gly Leu Asn Pro Glu Ser Gly Tyr Phe Ile
85      90      95
Gly Val Asp Ile Lys Arg Phe Ala Ile Asn Ile Gly Leu Ile Asn Phe
100     105     110
Lys Gly Asp Met Met Glu Leu Lys Met Asn Ile Pro Tyr Lys Phe Glu
115     120     125
Asn Ser Ile Glu Gly Leu Asn Glu Leu Cys Lys Leu Ile Ser Asn Phe
130     135     140
Ile Lys Lys Leu Thr Ile Ala Lys Asp Lys Ile Leu Asn Ile Asn Val
145     150     155     160
Asn Val Ser Gly Arg Val Asn Pro Glu Ser Gly Tyr Ser Phe Ser Gln
165     170     175
Phe Asn Phe Glu Glu Arg Pro Leu Ser Glu Val Leu Ala Glu Lys Leu
180     185     190
Gly Tyr Lys Val Thr Ile Asp Asn Asp Thr Arg Ala Met Thr Tyr Gly
195     200     205
Glu Tyr Leu Lys Gly Cys Val Asn Gly Glu Lys Asp Ile Ile Phe Val
210     215     220
Asn Ile Ser Trp Gly Leu Gly Val Gly Ile Ile Ile Asp Gly Lys Ile
225     230     235     240
Tyr Thr Gly Lys Ser Gly Phe Ser Gly Glu Phe Gly His Thr Ser Thr
245     250     255
Phe Asp Asn Glu Ile Ile Cys His Cys Gly Lys Lys Gly Cys Leu Glu
260     265     270
Thr Glu Ala Ser Gly Ser Ala Leu His Arg Ile Leu Leu Glu Arg Ile
275     280     285
Gln Asn Gly Glu Asn Ser Ile Leu Ser Asn Arg Ile Gly Asp Ile Asn
290     295     300
Asn Pro Ile Thr Leu Asp Glu Ile Ile Ala Ser Val Asn Lys Glu Asp
305     310     315     320
Leu Leu Cys Ile Glu Ile Val Glu Glu Ile Gly Gln Lys Leu Gly Lys
325     330     335
Gln Ile Ala Gly Leu Ile Asn Leu Phe Asn Pro Glu Leu Val Ile Ile
340     345     350
Gly Gly Thr Ile Ser Leu Thr Gly Asp Tyr Ile Thr Gln Pro Ile Lys
355     360     365
Thr Ala Val Arg Lys Tyr Ser Leu Asn Leu Val Asn Lys Asp Ser Ala
370     375     380
Ile Val Thr Ser Lys Leu Lys Asp Arg Ala Gly Ile Val Gly Ala Cys
385     390     395     400
Met Leu Ala Arg Ser Arg Met Phe Glu Cys
405     410

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<210> 5337

<211> 94

<212> PRT

<213> B.fragilis

<400> 5337

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Ile Arg Gln Lys Glu Asn Asn Pro Asp Arg Lys Val Gln Phe Ala Val
1          5          10          15
Asp Lys Lys Ala Ser Ile Pro Val Ser Ile Arg Lys Val Leu Cys Arg
20          25          30
Glu Trp Lys Thr Gly Arg Thr Phe Lys Gln Met Ile Tyr Ser His Phe
35          40          45
Arg Ala Gln Tyr Phe Asn Leu Gln Lys Leu Tyr Phe Asn Val Thr Leu
50          55          60
Lys Phe Val Phe Arg Leu Gln Ile Ala Asn Ser Leu Asn Ala Lys Asp
65          70          75          80
Leu Leu Phe Ala Asp Lys Asn Lys Ala Ile Gly Lys Trp His
85          90

```

<210> 5338

<211> 195

<212> PRT

<213> B.fragilis

<400> 5338

```

Ala Met Lys Lys Asp Ile Ile Leu Ser Gly Val Gly Gly Gln Gly Ile
1          5          10          15
Leu Ser Ile Ala Thr Val Ile Gly Lys Ala Ala Leu Lys Asp Gly Leu
20          25          30
Tyr Met Lys Gln Ala Glu Val His Gly Met Ser Gln Arg Gly Gly Asp
35          40          45
Val Gln Ser Asn Leu Arg Ile Ser Asp Gln Pro Ile Ala Ser Asp Leu
50          55          60
Ile Pro Ser Gly Lys Cys Asp Leu Ile Ile Ser Leu Glu Pro Met Glu
65          70          75          80
Gly Leu Arg Tyr Leu Pro Tyr Leu Gly His Glu Gly Trp Leu Val Thr
85          90          95
Asn Glu Thr Pro Phe Val Asn Ile Pro Asn Tyr Pro Ala Glu Ser Asp
100          105          110
Val Met Ala Glu Ile Asn Lys Leu Pro His Lys Val Val Leu Asn Val
115          120          125
Asp Lys Val Ala Lys Glu Leu Gly Ser Thr Arg Val Ala Asn Ile Val
130          135          140
Leu Leu Gly Ala Thr Ile Pro Phe Leu Gly Ile Asp Tyr Glu Lys Ile
145          150          155          160
Gln Asp Ser Ile Arg Glu Ile Phe Gln Arg Lys Gly Asp Ala Ile Val
165          170          175
Glu Leu Asn Leu Lys Ala Leu Ala Ala Gly Lys Glu Ile Ala Glu Lys
180          185          190
Thr Met Lys
195

```

<210> 5339

<211> 322

<212> PRT

<213> B.fragilis

<400> 5339

```

Ser Met Lys Asn Phe Ala Leu Ile Gly Ala Ala Gly Tyr Ile Ala Pro
1          5          10          15
Arg His Leu Arg Ala Ile Lys Asp Thr Gly Asn Arg Leu Val Ala Ala
20          25          30
Tyr Asp Thr Phe Asp Ser Val Gly Ile Met Asp Ser Phe Phe Pro Glu

```

35	40	45
Ser Ser Phe Phe Val Glu Gln Glu Leu Phe Asp Arg His Cys Thr Lys		
50	55	60
Leu Lys Gly Thr Asp Lys Gln Ile Asp Phe Leu Ser Ile Cys Thr Pro		
65	70	75
Asn Tyr Leu His Asp Ala His Met Arg Tyr Gly Leu Arg Leu Gly Ala		
85	90	95
Asp Val Ile Cys Glu Lys Pro Leu Val Leu Asn Pro Trp Asn Val Asp		
100	105	110
Ala Leu Gln Glu Val Glu Arg Glu Thr Gly His His Ile Tyr Thr Ile		
115	120	125
Leu Gln Leu Arg Leu His Gln Ser Ile Ile Asp Leu Lys Lys Lys Ile		
130	135	140
Glu Asn Gly Pro Lys Asp Lys Ile Tyr Asp Val Asp Leu Thr Tyr Ile		
145	150	155
Thr Ser Arg Gly Asn Trp Tyr Tyr Thr Ser Trp Lys Gly Asp Met His		
165	170	175
Lys Ser Gly Gly Ile Ala Thr Asn Ile Gly Val His Phe Tyr Asp Met		
180	185	190
Leu Ser Trp Val Phe Gly Pro Val Lys Lys Asn Ile Val His Val Tyr		
195	200	205
Thr His Asp Arg Ala Ala Gly Tyr Leu Glu Leu Glu Lys Ala Arg Val		
210	215	220
Arg Tyr Phe Leu Ser Ile Asn Ser Glu Asn Leu Pro Glu Asn Ala Val		
225	230	235
Gln Gly Glu Lys Leu Thr Tyr Arg Thr Ile Asn Ile Asp Gly Glu Glu		
245	250	255
Phe Glu Phe Ser Lys Gly Phe Thr Glu Leu His Thr Glu Ser Tyr Lys		
260	265	270
Asp Ile Leu Ala Gly Asn Gly Phe Gly Ile Glu Asp Ala Arg Asn Ala		
275	280	285
Ile Asn Ile Val Tyr Asp Ile Arg His Ala Glu Pro Ile Gly Leu Lys		
290	295	300
Gly Asp Tyr His Pro Leu Ala Lys Leu Pro Leu Ser Lys His Pro Phe		
305	310	315
Gly Trp		320

<210> 5340

<211> 89

<212> PRT

<213> B.fragilis

<400> 5340

Lys Tyr Glu Lys Asn Arg Lys Cys Gly Gly Tyr Thr Glu Lys Asn Asn	
1	15
Cys His Cys Pro Arg Tyr Lys Ile Leu Phe Ala His Ile Leu Glu Arg	
20	30
Tyr Tyr Arg Asp Phe Glu Ala Phe Ile Pro Ile Trp Ala Gly Cys Pro	
35	45
Gly Ile His Thr Pro Trp Lys Arg Glu Val Met Gln Glu Ser Gly Cys	
50	60
Cys Lys Pro Tyr Leu Pro Lys Lys Leu Pro Asp Ser Ser Arg Ile Glu	
65	80
Phe Cys Phe Asp Val Phe Val Ile Cys	
85	

<210> 5341

<211> 376

<212> PRT
 <213> B.fragilis

<400> 5341

Phe	Ile	Met	Asn	Lys	Arg	Ile	Trp	Leu	Ser	Leu	Ala	His	Met	Gly	Gly
1			5					10					15		
Arg	Glu	Gln	Asp	Phe	Ile	Lys	Glu	Ala	Phe	Asp	Thr	Asn	Trp	Val	Val
			20				25					30			
Pro	Leu	Gly	Pro	Asn	Val	Asp	Ala	Phe	Glu	Gln	Ser	Leu	Ala	Glu	Tyr
	35					40					45				
Leu	His	Glu	Asp	Arg	Arg	Val	Val	Ala	Leu	Ser	Ala	Gly	Thr	Ala	Ala
	50				55					60					
Leu	His	Leu	Gly	Leu	Ile	Leu	Leu	Asn	Val	Lys	Pro	Gly	Asp	Glu	Val
65				70				75						80	
Ile	Cys	Gln	Ser	Phe	Thr	Phe	Ala	Ala	Ser	Ala	Asn	Pro	Ile	Ser	Tyr
			85					90					95		
Leu	Glu	Ala	Lys	Pro	Val	Phe	Val	Asp	Ser	Glu	Lys	Asp	Thr	Trp	Asn
		100					105					110			
Met	Asp	Pro	Val	Leu	Leu	Glu	Glu	Ala	Ile	Lys	Asp	Arg	Leu	Arg	Lys
	115					120					125				
Thr	Gly	Lys	Leu	Pro	Lys	Ala	Ile	Ile	Pro	Val	His	Leu	Tyr	Gly	Met
	130				135					140					
Pro	Ala	Lys	Met	Asp	Glu	Ile	Met	Asp	Ile	Ala	Gly	Arg	Tyr	Gly	Ile
145				150				155						160	
Pro	Val	Leu	Glu	Asp	Ala	Ala	Glu	Ala	Leu	Gly	Ser	Glu	Leu	Asn	Gly
			165					170						175	
Arg	Lys	Cys	Gly	Thr	Phe	Gly	Glu	Leu	Ala	Ala	Leu	Ser	Phe	Asn	Gly
			180				185						190		
Asn	Lys	Met	Ile	Thr	Thr	Ser	Gly	Gly	Gly	Ala	Leu	Ile	Cys	Arg	Thr
	195					200				205					
Glu	Glu	Glu	Ala	Arg	Gln	Thr	Lys	Phe	Tyr	Ala	Thr	Gln	Ala	Arg	Asp
	210				215					220					
Ala	Ala	Pro	His	Tyr	Gln	His	Thr	His	Ile	Gly	Tyr	Asn	Tyr	Arg	Met
225				230						235				240	
Ser	Asn	Ile	Cys	Ala	Gly	Ile	Gly	Arg	Gly	Gln	Met	Phe	Val	Leu	Asp
			245					250					255		
Glu	His	Ile	Ala	Arg	Arg	Arg	Ala	Ile	His	Ser	Leu	Tyr	Val	Asp	Leu
		260					265						270		
Leu	Lys	Asp	Val	Ala	Gly	Ile	Thr	Val	Met	Glu	Asn	Pro	Asp	Ser	Arg
	275					280						285			
Phe	Ala	Ser	Asn	Phe	Trp	Leu	Thr	Cys	Ile	Leu	Val	Asp	Pro	Lys	Leu
	290				295						300				
Ala	Gly	Lys	Ser	Arg	Glu	Asp	Ile	Arg	Leu	Lys	Leu	Asp	Ser	Glu	Asn
305				310						315				320	
Ile	Glu	Thr	Arg	Pro	Leu	Trp	Lys	Pro	Met	His	Leu	Gln	Pro	Val	Phe
			325					330						335	
Thr	Asp	Ala	Pro	Phe	Tyr	Gly	Asn	Gly	Thr	Ser	Glu	Arg	Leu	Phe	Asp
		340					345					350			
Ile	Gly	Leu	Cys	Leu	Pro	Ser	Gly	Pro	Thr	Leu	Thr	Asp	Glu	Asp	Ile
	355					360						365			
Arg	Arg	Val	Val	Asp	Met	Ile	Arg								
	370					375									

<210> 5342
 <211> 522
 <212> PRT
 <213> B.fragilis

<400> 5342

Lys Lys Met Lys Gln Lys Gln Phe Tyr Phe Ile Tyr Val Phe Leu Leu
 1 5 10 15
 Ser Met Thr Phe Leu Gly Ala Cys Ser Lys Asp Ser Pro Asn Glu Leu
 20 25 30
 Ile Pro Asn Thr Ile Val Lys Ile Glu Ile Asp Glu Leu Pro Gly Lys
 35 40 45
 Arg Ile Tyr Phe Ile Gly Glu Glu Leu Asp Val Ser Asp Met Thr Leu
 50 55 60
 Lys Val Phe Tyr Ser Asn Glu Thr Ser Glu Ile Val Pro Val Lys Lys
 65 70 75 80
 Asp Glu Val Thr Gly Phe Asn Ser Thr Val Pro Glu Asn Asp Gln Ile
 85 90 95
 Leu Glu Val His Lys Gly Ser Phe Thr Val Thr Phe Lys Ile Gln Val
 100 105 110
 Leu Ile Asn Asp Ile Gln Ala Ile Ser Ile Lys Thr Leu Pro Ser Lys
 115 120 125
 Thr Val Tyr Thr Leu Gly Glu Pro Leu Ser Leu Ser Asn Met Val Leu
 130 135 140
 Glu Ile Asn Tyr Ala Asp Gly Thr Ile Lys Glu Asn Ser Ala Pro Ser
 145 150 155 160
 Ala Asp Trp Val Gln Gly Phe Asn Ser Ser Val Pro Ala Gln Leu Gln
 165 170 175
 Ile Val Thr Leu Glu Leu Asp Gly Lys Gln Val Ser Phe Asp Val Gln
 180 185 190
 Ile Leu Pro Val Lys Val Asp Gly Asp Lys Val Val Ser Val Ile Asp
 195 200 205
 Ser Asp Phe Thr Ser Ile Thr Phe Pro Asp Gly Ile Arg Thr Ile Gly
 210 215 220
 Ser Lys Ala Phe Glu Asn Lys Asn Ile Lys Ala Ser Glu Leu Leu Phe
 225 230 235 240
 Pro Ala Ser Leu Ser Thr Ile Glu Gln Ala Ala Phe Ala Tyr Cys Arg
 245 250 255
 Asn Leu Lys Ile Val Asp Leu Ser His Thr Ser Ile Lys Glu Leu Pro
 260 265 270
 Glu Glu Ala Phe Leu Phe Ser Gly Ile Lys Lys Ile Ala Leu Pro Ala
 275 280 285
 Ser Leu Glu Ile Val Gly Lys Glu Ala Phe Tyr Gly Cys Thr Asp Leu
 290 295 300
 Asn Val Ile Asp Ile Ser His Thr Ser Val Lys Glu Leu Gln Asn Gly
 305 310 315 320
 Ala Phe Gly Lys Ser Gly Ile Ser Ser Ile Ser Leu Pro Ser Thr Phe
 325 330 335
 Lys Ile Val Gly Thr Ser Ala Phe Ile Glu Thr Lys Asn Leu Lys Glu
 340 345 350
 Leu Thr Leu Pro Glu Gly Ser Glu Val Ile Asp Leu Glu Ala Phe Ser
 355 360 365
 Gly Ser Ser Ile Gln Lys Val Thr Leu Pro Asn Thr Ile Tyr His Ile
 370 375 380
 Asp Arg Ser Phe Tyr Asn Cys Pro Glu Leu Thr Thr Ile Glu Thr Tyr
 385 390 395 400
 Gly Thr Arg Thr Thr Pro Ser Pro Val Asp Arg Thr Ala Ala Ile Val
 405 410 415
 Ser Glu Cys Phe Asn His Ser Pro Lys Leu Thr Val Leu Lys Ile Pro
 420 425 430
 Ala Ser Ile Ala Lys Ile Gly Ile Ser Ala Leu Asn Lys Cys Gln Val
 435 440 445
 Lys Thr Leu Ile Leu Pro Ala Ser Val Lys Ala Leu Asp Phe Asn Ala
 450 455 460
 Phe Gly Asn Ala Val Ser Leu Asp Glu Ile Ser Leu Met Ser Pro Thr

465 470 475 480
 Met Val Thr Ala Asp Tyr Tyr Pro Val Ala Pro Gly Ile Gln Lys Ile
 485 490 495
 Arg Val Pro Gln Asn Leu Val Glu Thr Tyr Lys Gln Asn Lys Ala Trp
 500 505 510
 Lys Pro Phe Ala Glu Lys Ile Val Ala Leu
 515 520

<210> 5343
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 5343
 Ile Met Lys Lys Glu Asp Leu Arg Ile Val Tyr Met Gly Thr Pro Asp
 1 5 10 15
 Phe Ala Val Glu Ala Leu Gln Cys Leu Val Glu Gly Gly Tyr Asn Val
 20 25 30
 Val Gly Val Ile Thr Met Pro Asp Lys Pro Ala Gly Arg Gly His Lys
 35 40 45
 Ile Gln Tyr Ser Pro Val Lys Gln Tyr Ala Leu Asp His Gln Leu Pro
 50 55 60
 Leu Leu Gln Pro Glu Lys Leu Lys Asp Glu Glu Phe Ile Gln Ala Leu
 65 70 75 80
 Arg Glu Trp Lys Ala Asp Leu Gln Ile Val Val Ala Phe Arg Met Leu
 85 90 95
 Pro Glu Val Val Trp Asn Met Pro Arg Leu Gly Thr Phe Asn Leu His
 100 105 110
 Ala Ser Leu Leu Pro Gln Tyr Arg Gly Ala Ala Pro Ile Asn Trp Ala
 115 120 125
 Val Ile Asn Gly Asp Thr Glu Thr Gly Ile Thr Thr Phe Phe Leu Lys
 130 135 140
 His Glu Ile Asp Thr Gly Glu Val Ile Gln Gln Val Arg Ile Pro Ile
 145 150 155 160
 Ala Asp Thr Asp Asn Val Glu Ile Val His Asp Lys Leu Met His Leu
 165 170 175
 Gly Gly Arg Leu Val Ile Glu Thr Val Asp Ala Ile Leu Glu Gly Lys
 180 185 190
 Val Lys Ser Ile Pro Gln Glu Glu Met Ala Val Ala Gly Glu Leu Arg
 195 200 205
 Pro Ala Pro Lys Ile Phe Lys Glu Thr Cys Arg Ile Asp Trp Asn Gln
 210 215 220
 Pro Val Lys Arg Val Tyr Asp Phe Ile Arg Gly Leu Ser Pro Tyr Pro
 225 230 235 240
 Ala Ala Trp Ser Glu Leu Val Asn Pro Glu Gly Glu Ala Val Val Val
 245 250 255
 Lys Ile Phe Glu Ser Glu Lys Leu Pro Lys Val His Thr Leu Ala Pro
 260 265 270
 Gly Ser Ile Val Thr Asp Gly Lys Asn Phe Leu Arg Val Ala Val Pro
 275 280 285
 Asp Gly Phe Val Asn Val Leu Ser Leu Gln Leu Pro Gly Lys Lys Arg
 290 295 300
 Leu Lys Thr Asp Glu Leu Leu Arg Gly Phe His Leu Thr Glu Ala Phe
 305 310 315 320
 Lys Met Lys Ala Val
 325

<210> 5344
 <211> 181

<212> PRT

<213> B.fragilis

<400> 5344

```

Arg Phe Ile Glu Arg Met Glu Glu Thr Ala Arg Lys Ile Lys Glu Asn
1           5           10           15
Thr Ser Cys Trp Tyr Ala Val Tyr Thr Ala Pro Arg Ala Glu Lys Lys
          20           25           30
Val Lys Glu Gln Leu Asp Lys Ile Gly Val Glu Asn Tyr Leu Pro Leu
          35           40           45
Gln Pro Val Val Arg Leu Trp Asn Asn Arg Lys Lys Lys Ile Phe Ile
          50           55           60
Pro Val Val Pro Gly Cys Leu Phe Val His Ile Ser Ser Glu Glu Ile
65           70           75           80
Ala His Val Ala Gly Ile His Gly Val Ala Phe Leu Leu Lys Glu Lys
          85           90           95
Gly Gln Tyr Val Ser Ile Pro Glu Val Gln Met Glu Thr Phe Lys Thr
          100          105          110
Met Ile Glu His Ser Cys Glu Leu Val Glu Phe Ala Pro Asn Glu Phe
          115          120          125
Val Pro Gly Thr Ile Val Arg Val Ile Ser Gly Gln Leu Gln Gly Leu
          130          135          140
Glu Ala Glu Leu Val Asp Cys Gln Gly Asn Asn Lys Leu Leu Leu Arg
145          150          155          160
Val Glu Gly Leu Gly Cys Ala Leu Val Thr Val Ser Thr Asp Cys Val
          165          170          175
Ala Ser Lys Glu Glu
          180

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<210> 5345

<211> 341

<212> PRT

<213> B.fragilis

<400> 5345

```

Lys Glu Ile Glu Met Ser Glu Val Arg His Val Leu Gly Ile Ser Gly
1           5           10           15
Gly Lys Asp Ser Ala Ala Leu Ala Ile Tyr Leu Lys Asp Lys Tyr Pro
          20           25           30
Asn Leu His Ile Glu Tyr Tyr Ser Ser Asp Thr Lys Cys Glu Leu Asp
          35           40           45
Glu Thr Ile Gln Phe Ile Asp Arg Leu Arg Ser Tyr Leu Gly His Ile
          50           55           60
Thr Thr Leu Ile Ala Ala Glu Gly Ser Pro Glu Pro Thr Pro Phe Asp
65           70           75           80
His Phe Leu Lys Val Ser Gly Gly Tyr Leu Pro Ser Val Gln Ala Arg
          85           90           95
Trp Cys Thr Gln Lys Met Lys Leu Ala Glu Phe Glu Lys Phe Val Gly
          100          105          110
Asp Thr Pro Thr Val Ser Tyr Val Gly Ile Arg Gly Asp Glu Asp Arg
          115          120          125
Glu Gly Tyr Val Ser Thr Lys Pro Asn Ile Gln Ala Ile Phe Pro Phe
          130          135          140
Arg Lys Asn Ile Trp Ser Met Asp Val Ile His Glu Val Leu His Asp
145          150          155          160
Lys Asn Ile Glu Asn Phe Ala Glu Cys Tyr Arg Asn Val Ala Asp Asp
          165          170          175
Glu Thr Tyr Gln Thr Val Glu Ala Ala Leu Thr Ser Lys Leu Thr Lys
          180          185          190

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His Phe Tyr Tyr Ser Lys Lys Leu Asn Met Leu Leu Asp Ala Asp Val
 195 200 205
 Ile Thr Phe Asn His Ala Val Phe Ser Phe Leu Lys Gln Tyr Thr Asp
 210 215 220
 Tyr Pro Val Gly Lys Leu Asp Tyr Phe Pro Leu Ile Asp Asn Asp Glu
 225 230 235 240
 Val Leu Val Arg Glu Glu Ile Phe Arg Ile Leu Glu Asp Ser Gly Val
 245 250 255
 Gly Ile Pro Ala Tyr Tyr Asn Leu Ile Asp Phe Glu Val Asp Gly Lys
 260 265 270
 Lys Gly Gln Tyr Cys Arg Ser Arg Ser Gly Cys Tyr Phe Cys Phe Phe
 275 280 285
 Gln Gln Lys Ile Glu Trp Ile Trp Leu Tyr Glu Gln His Pro Asp Leu
 290 295 300
 Phe Lys Lys Ala Met Glu Tyr Glu Lys Asp Gly Tyr Thr Trp Ile Gln
 305 310 315 320
 Gly Glu Pro Leu Ser Glu Leu Ile Arg Ser Gly Val Val Cys Gly Lys
 325 330 335
 Ser Ser Leu Thr Arg
 340

<210> 5346

<211> 393

<212> PRT

<213> B.fragilis

<400> 5346

Met Gly Asn Glu Lys Lys Lys Val Val Lys Ile Val Pro Thr Tyr Phe
 1 5 10 15
 Glu His Glu Thr Arg Asp Leu Lys Glu Ile Ser Val Leu Asn Ser Leu
 20 25 30
 Gly Cys Asn Val Ile Val Val Ala Lys Gly Asp Asn Ala Val Ile Ile
 35 40 45
 Glu Glu Ser Cys Tyr Ile Leu His Arg Leu Cys Ser Arg Pro Leu Met
 50 55 60
 Pro Phe Val Ser Asn Leu Phe Leu Asn Arg Leu Phe Ser Leu Tyr Ile
 65 70 75 80
 Trp Val Arg Tyr Val Arg Lys Leu His Gly Glu Leu Leu Ser Cys His
 85 90 95
 Asp Leu Phe Cys Leu Cys Ile Gly Trp Leu Ser Thr Leu Gly Leu Arg
 100 105 110
 Lys Lys Pro Phe Leu Val Tyr Asp Ser His Glu Phe Glu Tyr Gly Arg
 115 120 125
 Asn Cys Lys Arg Asn Phe Val Ser Lys Leu Phe Ile Lys Thr Leu Glu
 130 135 140
 Arg Phe Leu Cys Lys Lys Thr Ala Leu Asn Ile Val Val Asn Glu Ser
 145 150 155 160
 Ile Ala Asp Ala Val Gln Thr Leu His Gly Leu Asn Asn Arg Pro Leu
 165 170 175
 Val Val Arg Asn Val Pro Leu Tyr Trp Asn Ile Asp Val Asn Lys Cys
 180 185 190
 Val Leu Arg Arg Lys Lys Ile Cys Glu Ala Tyr Gly Ile Pro Ile Asp
 195 200 205
 Ser Phe Ile Ile Met Tyr His Gly Val Ile Ala Ala Gly Arg Gly Ile
 210 215 220
 Glu Asn Ala Ile Tyr Ala Val Glu Asn Val Glu Asn Thr Cys Leu Leu
 225 230 235 240
 Ile Leu Gly Asn Gly Glu Lys Ser Tyr Ile Ala Leu Leu Glu Lys Met
 245 250 255

```

Ile Ser Ser Leu Arg Leu Glu Gln Lys Val Phe Phe His Thr Ala Val
      260      265      270
Glu His Ser Ile Leu Trp Glu Tyr Ile Gly Ser Val Asp Val Glu Leu
      275      280      285
Ser Val Ile Leu Asn Thr Cys Ile Ser Tyr Tyr Tyr Ala Leu Pro Asn
      290      295      300
Lys Ile Phe Glu Ser Ile Gln Ala Met Ile Pro Leu Ile Val Ser Asp
305      310      315      320
Phe Pro Glu Met Glu Arg Val Val Lys Met Tyr Asp Ile Gly Val Cys
      325      330      335
Cys Lys Ser Asp Asp Val Asn Ser Leu Val Glu Ala Ile Arg Leu Met
      340      345      350
Asn Lys Asp Lys Val Leu Tyr Ser Arg Phe Lys Ala Asn Met Gln Asp
      355      360      365
Ala Lys Lys Glu Leu Cys Trp Glu Asn Glu Lys Glu Ile Leu Glu Gly
      370      375      380
Ala Tyr Arg Ser Ile Leu Met Asp Ile
385      390

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<210> 5347

<211> 606

<212> PRT

<213> B.fragilis

<400> 5347

```

Arg Trp Ser Asp Gln Asp Tyr Ser Arg Met Met Glu Lys Glu Lys Ile
1      5      10      15
Ser Leu Leu Gln Arg Phe Ile Ile Trp Arg Glu Asn Lys Ile Lys Glu
      20      25      30
Lys Gln Phe Ile Leu Ile Leu Ser Phe Leu Val Gly Ile Phe Thr Ala
      35      40      45
Ile Ala Ala Leu Leu Leu Lys Phe Phe Ile His Thr Ile Gln Asn Phe
      50      55      60
Leu Thr Asp Asn Phe Asn Thr Thr Glu Ala Asn Tyr Leu Tyr Leu Val
65      70      75      80
Tyr Pro Val Val Gly Ile Phe Leu Ala Gly Trp Phe Val Arg Asn Ile
      85      90      95
Val Lys Asp Asp Ile Ser His Gly Val Thr Lys Ile Leu Tyr Ala Ile
      100      105      110
Ser Arg Arg Gln Gly Arg Ile Lys Arg His Asn Ile Trp Ser Ser Thr
      115      120      125
Ile Ala Ser Ala Ile Thr Ile Gly Phe Gly Gly Ser Val Gly Ala Glu
      130      135      140
Ala Pro Ile Val Leu Thr Gly Ser Ala Ile Gly Ser Asn Leu Gly Ser
145      150      155      160
Met Phe Lys Met Glu His Arg Thr Leu Met Leu Leu Val Gly Cys Gly
      165      170      175
Ala Ala Gly Ala Ile Gly Gly Ile Phe Lys Ala Pro Ile Ala Gly Leu
      180      185      190
Val Phe Thr Leu Glu Val Leu Met Ile Asp Leu Thr Met Ser Ser Leu
      195      200      205
Leu Pro Leu Leu Ile Ser Ala Val Thr Ala Ala Thr Val Ser Tyr Ile
      210      215      220
Thr Thr Gly Gln Glu Ala Met Phe Lys Phe His Leu Asp Gln Pro Phe
225      230      235      240
Glu Leu Glu Arg Ile Pro Tyr Val Ile Leu Leu Gly Ile Phe Cys Gly
      245      250      255
Leu Val Ser Leu Tyr Phe Thr Arg Ala Met Asn Ser Val Glu Gly Val
      260      265      270

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Phe Gly Lys Leu Ser Asn Pro Tyr Lys Lys Leu Ala Leu Gly Gly Val
  275                280                285
Met Leu Ser Val Leu Ile Phe Leu Phe Pro Pro Leu Tyr Gly Glu Gly
  290                295                300
Tyr Asp Thr Ile Glu Leu Leu Asn Gly Val Ser Asn Ala Asp Trp
  305                310                315                320
Asp Thr Val Leu Asn Asn Ser Leu Phe Tyr Gly Tyr Gly Asn Leu Leu
                325                330                335
Leu Val Tyr Leu Val Leu Ile Ile Leu Leu Lys Val Phe Ala Ser Ser
                340                345                350
Ala Thr Asn Gly Gly Gly Gly Cys Gly Gly Ile Phe Ala Pro Ser Leu
                355                360                365
Tyr Leu Gly Cys Ile Ala Gly Phe Val Phe Ser His Phe Ser Asn Asp
  370                375                380
Phe Asp Phe Thr Ser Thr Leu Pro Glu Lys Asn Phe Ala Leu Met Gly
  385                390                395                400
Met Ala Gly Val Met Ser Gly Val Met His Ala Pro Leu Thr Gly Val
                405                410                415
Phe Leu Ile Ala Glu Leu Thr Gly Gly Tyr Asp Leu Phe Leu Pro Leu
                420                425                430
Met Ile Val Ser Val Ser Ser Tyr Leu Thr Ile Ile Val Phe Glu Pro
  435                440                445
His Ser Ile Tyr Ser Met Arg Leu Ala Lys Lys Gly Gln Leu Leu Thr
  450                455                460
His His Lys Asp Lys Ala Val Leu Thr Leu Met Lys Val Glu Asn Val
  465                470                475                480
Val Glu Thr Asp Phe Val Ser Val Arg Pro Glu Met Asp Leu Gly Glu
                485                490                495
Leu Val Lys Ala Ile Ser Thr Ser His Arg Asn Met Phe Pro Val Thr
                500                505                510
Asp Lys Asp Gly Val Leu Leu Gly Val Val Leu Leu Asp Asp Ile Arg
  515                520                525
Asn Ile Met Phe Arg Gln Glu Leu Tyr His Arg Phe Thr Val Ser Lys
  530                535                540
Leu Met Thr Ser Val Pro Ala Arg Leu Tyr Asp Thr Asp Ser Met Glu
  545                550                555                560
Gln Val Met Gln Thr Phe Asp Asp Thr Lys Ala Trp Asn Leu Pro Val
                565                570                575
Val Asn Glu Glu Gly Lys Tyr Leu Gly Phe Val Ser Lys Ser Lys Ile
                580                585                590
Phe Asn Ser Tyr Arg Gln Val Leu Val His Phe Ser Glu Asp
  595                600                605

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<210> 5348

<211> 83

<212> PRT

<213> B.fragilis

<400> 5348

```

Asn His Gly Glu Lys Ser Gly Gly Ser Glu Cys Tyr Ser Cys Gly Tyr
  1                5                10                15
Ser Ser Leu Ser Leu Asp Ala Cys Leu Ile Lys Ala Asn Asp Ser Asp
  20                25                30
Pro Val Tyr Leu Ser Thr Asn Gly Val Lys Ser His Ile Lys Ser Val
  35                40                45
Glu Asp Phe Asn Lys Val Gly Phe Asp Trp Asp Lys Ile Lys Val Met
  50                55                60
Ser Pro Ala Glu Val Asp Ala Ile Pro Thr Ala Pro Glu Tyr Glu Ile
  65                70                75                80

```

Ala Asn Trp

<210> 5349

<211> 311

<212> PRT

<213> B.fragilis

<400> 5349

```

Tyr Lys Asn Glu Ile Ile Met Glu Lys Ile Ile Gly Leu Ile Asn Ala
1          5          10          15
Pro Phe Thr Pro Phe Tyr Glu Asn Gly Glu Val Asn Tyr Glu Pro Ile
          20          25          30
Glu Ala Tyr Ala Lys Met Leu Val Lys Asn Gly Leu Gln Gly Val Phe
          35          40          45
Ile Asn Gly Ser Ser Gly Glu Gly Tyr Met Leu Thr Asp Glu Glu Arg
          50          55          60
Met Lys Leu Ala Glu Arg Trp Val Glu Val Ser Pro Lys Gly Phe Lys
65          70          75          80
Val Ile Val His Val Gly Ser Cys Cys Val Lys Ser Ser Arg Lys Leu
          85          90          95
Ala Glu His Ala Gln Lys Ile Gly Ala Trp Gly Ile Gly Ala Met Ala
          100          105          110
Pro Pro Phe Pro Lys Val Gly Arg Val Glu Glu Leu Val Lys Tyr Cys
          115          120          125
Glu Glu Ile Ala Cys Gly Ala Pro Asp Leu Pro Phe Tyr Tyr Tyr His
          130          135          140
Ile Pro Ala Phe Asn Gly Ala Phe Leu Ser Met Val Ala Phe Leu Glu
145          150          155          160
Ala Val Asp Gly Arg Ile Pro Asn Phe Ala Gly Ile Lys Tyr Thr Phe
          165          170          175
Glu Ser Met Tyr Glu Tyr Asn Gln Cys Arg Leu Tyr Lys Gly Gly Lys
          180          185          190
Phe Asp Met Leu His Gly Gln Asp Glu Thr Ile Leu Pro Cys Leu Ala
          195          200          205
Met Gly Gly Ala Gln Gly Gly Ile Gly Gly Thr Thr Asn Tyr Asn Gly
210          215          220
Val Asn Leu Val Gly Ile Ile Glu Ala Trp Lys Ala Gly Asp Leu Glu
225          230          235          240
Lys Ala Arg Glu Leu Gln Asn Phe Ser Gln Glu Val Ile Asn Val Ile
          245          250          255
Cys His Phe Arg Gly Asn Ile Val Gly Gly Lys Arg Ile Met Lys Leu
          260          265          270
Ile Gly Leu Asp Leu Gly Lys Asn Arg Thr Pro Phe Gln Asn Met Thr
          275          280          285
Asp Asp Glu Glu Val Arg Met Lys Ala Glu Leu Glu Ala Ile His Phe
          290          295          300
Phe Asp Arg Cys Asn Lys Phe
305          310

```

<210> 5350

<211> 370

<212> PRT

<213> B.fragilis

<400> 5350

```

Tyr Lys Met Glu Glu Tyr Lys Arg Cys Thr Arg Cys Val Met Asp Asn
1          5          10          15
Lys Ser Asp Glu Thr Ile Thr Phe Asp Lys His Gly Arg Cys Asn Tyr

```

			20					25					30			
Cys	Thr	Asp	Ala	Leu	Asn	Leu	Ile	Gly	Lys	Val	Tyr	Phe	Pro	Asn	Ala	
		35					40					45				
Glu	Gly	Glu	Gln	Lys	Leu	Arg	Gln	Met	Ile	Glu	Met	Leu	Lys	Tyr	Glu	
	50					55					60					
Gly	Lys	Gly	Lys	Gln	Tyr	Asp	Cys	Leu	Met	Gly	Ile	Ser	Gly	Gly	Leu	
65					70					75					80	
Asp	Ser	Ala	Tyr	Leu	Ala	Tyr	Leu	Gly	Ser	Val	Lys	Trp	Gly	Leu	Arg	
				85					90					95		
Ile	Leu	Ala	Val	His	Val	Asp	Asp	Gly	Tyr	Asp	Thr	Glu	Leu	Ala	Thr	
			100					105					110			
Ser	Asn	Ile	Lys	Asn	Leu	Cys	Glu	Ala	Cys	Gly	Ile	Glu	Leu	Met	Val	
	115						120					125				
Glu	Ala	Pro	Asp	Ser	Glu	Gln	Phe	Asn	Ala	Met	Thr	Lys	Ala	Phe	Ile	
	130					135					140					
Lys	Ala	Glu	Val	Pro	Asn	Ile	Ala	Ile	Pro	Gln	Asp	Asn	Ile	Leu	Phe	
145					150					155					160	
Ala	Cys	Leu	Tyr	Asn	Tyr	Ala	Arg	Lys	Tyr	Lys	Val	Tyr	Asn	Phe	Leu	
				165					170					175		
Ser	Gly	Gly	Asn	Phe	Ala	Leu	Glu	Cys	Val	Leu	Gln	Lys	Gly	Asn	Thr	
			180					185					190			
Tyr	Glu	Val	Phe	Asp	Met	Ile	His	Asn	Arg	Asp	Ile	Gln	Lys	Lys	Phe	
		195				200						205				
Gly	Ser	Lys	Pro	Ile	Asp	Lys	Leu	Ser	Phe	Leu	Ser	Ser	Tyr	Gln	Lys	
	210					215					220					
Ile	Val	Asp	Thr	Tyr	Leu	Tyr	Lys	Ile	Lys	Ser	Leu	Arg	Pro	Leu	Asn	
225					230					235					240	
Tyr	Ile	Asp	Tyr	Asn	Lys	Glu	Cys	Ala	Ile	His	Glu	Leu	Asn	Asp	Phe	
				245					250					255		
Cys	Gly	Phe	Thr	Tyr	Tyr	Glu	Ala	Lys	His	Leu	Glu	Asn	Ile	Leu	Thr	
			260					265					270			
Lys	Val	Thr	Gln	Leu	Tyr	Trp	Phe	Tyr	His	Lys	Phe	His	Val	Asp	Lys	
		275					280					285				
Arg	Thr	Ser	His	Leu	Ser	Ser	Leu	Ile	Val	Ser	Gly	Gln	Met	Ser	Arg	
	290					295					300					
Glu	Gln	Ala	Leu	Ala	Glu	Leu	Glu	Lys	Pro	Val	Tyr	Asp	Lys	Asn	Lys	
305					310					315					320	
Met	Glu	Lys	Asp	Ile	Glu	Phe	Val	Leu	Lys	Lys	Ile	Glu	Met	Ser	Arg	
				325					330					335		
Glu	Glu	Phe	Glu	Glu	Leu	Ile	Asn	Arg	Pro	Gly	Lys	Gln	His	Ser	Asp	
			340					345					350			

<210> 5351

<211> 490

<212> PRT

<213> B.fragilis

<400> 5351

Glu Arg Phe Trp Lys Val Cys Lys Ile His Trp Asn Leu Phe Ala Val
1 5 10 15

Asn Ile Leu Arg Ser Tyr Phe Asn Lys Ile Phe Met Thr Ala Ile Phe
20 25 30

Ile Val Val Phe Ser Val Ile Tyr Leu Leu Val Leu Tyr Asn Phe Tyr
35 40 45

Ile Ala Ile Cys Gly Arg Ile Arg Val Phe Thr Ile Thr Ser Phe Phe

50	55	60
Cys Leu Cys Tyr Ile Ser Phe Ala Tyr Ile Gly Ser Ile Leu Leu Asn		
65	70	75
Ile Met His Phe Glu Ala Glu Asp Tyr Leu Gly Met Tyr Ala Arg Pro		80
	85	90
Asp Ile Phe Phe Leu Val Trp Val Phe Thr Leu Leu Gly Leu Leu Phe		95
	100	105
Leu Leu Leu Gly Phe Ala Ile Ala Asn Ile Val Phe Lys Asn Ile Cys		110
	115	120
Tyr Pro Arg Lys Asn Arg Asp Leu Gln Leu Ile Lys Val Ser Ile Ser		125
	130	135
Cys Phe Asp Asn Ser Asn Lys Asn Phe Phe Val Ile Leu Phe Leu Phe		140
145	150	155
Ile Leu Ser Phe Phe Val Leu Leu Val Tyr Arg Asn Ala Ile Gly Gly		160
	165	170
Phe Pro Leu Glu Ser Val Phe Ser Ala Asp Asn Gly Thr Ala Leu Ala		175
	180	185
Phe Leu Arg Ser Glu Ala Thr Asn Asn Phe Ser Gly Lys Phe Tyr Arg		190
	195	200
Tyr Val Met Phe Met Glu Thr Leu Pro Leu Phe Leu Phe Ile Val Val		205
	210	215
Ser Phe Ile Lys Ser Cys Lys Lys Lys Lys Trp Lys Tyr Leu Tyr Ile		220
225	230	235
Ala Leu Phe Leu Tyr Asn Leu Phe Tyr Ser Leu Ser Thr Ile Gln Lys		240
	245	250
Ala Pro Ile Leu Lys Phe Leu Leu Leu Cys Cys Ile Ile Phe Phe Tyr		255
	260	265
Lys Asn Gly Phe Ile Asn Lys Lys Ile Ile Leu Lys Leu Val Val Phe		270
	275	280
Ser Cys Gly Leu Val Leu Val Met Tyr Met Cys Phe Met Gly Leu Glu		285
	290	295
Asp Ala Pro Ile Glu Val Ile Ile Glu Gly Ala Leu His Arg Val Phe		300
305	310	315
Ile Gly Ala Ile His Pro Phe Tyr Trp Tyr Ile Lys Tyr Ala Glu Glu		320
	325	330
Phe Gly Phe Leu Tyr Gly Thr Ser Phe Pro Asn Pro Ala Gly Ile Phe		335
	340	345
Pro Phe Glu Ser Phe Arg Leu Thr Val Glu Ile Met Asn Tyr Ala Lys		350
	355	360
Gly Asp Leu Leu Gly Asp Leu Val Gly Ser Met Pro Thr Val Tyr Ile		365
	370	375
Gly Glu Met Tyr Ile Asn Phe Gly Leu Tyr Gly Leu Ala Leu Ala Ser		380
385	390	395
Leu Met Phe Gly Phe Ile Leu Gln Thr Leu Asp Ile Leu Phe Val Arg		400
	405	410
Tyr Leu Leu Val Asn Lys Ser Val Leu Val Ser Ser Leu Tyr Ile Tyr		415
	420	425
Met Ile Tyr Tyr Phe Ser Gln Phe Thr Glu Thr Gly Ile Ser Gly Ile		430
	435	440
Ile Ile Asp Thr Asp Leu Tyr Ile Val Leu Phe Ile Ser Phe Ile Tyr		445
	450	455
Cys Leu Ile Asn Arg Tyr Asn Leu Arg Arg Tyr Gly Lys Lys Lys Gly		460
465	470	475
Leu Pro Cys Tyr Lys Cys Thr Ser Cys Arg		480
	485	490

<210> 5352

<211> 125

<212> PRT

<213> B.fragilis

<400> 5352

```

Tyr Arg Leu Cys Lys Thr Phe Thr Gln Thr Val Tyr Ala Leu Ala Asp
1          5          10          15
Ile Met Thr Leu Phe Glu Leu Phe Leu Asn Lys Leu Leu Tyr Arg Phe
          20          25          30
Tyr Arg Ser Val Leu Ser Ser Phe Ser Ile Tyr Ser Leu Val Phe Ile
          35          40          45
His His Ile Thr Arg Tyr Ala Ala His Lys Thr Gly Lys Tyr Leu Arg
          50          55          60
Lys Gln Ile Ser Lys Gln Leu Arg Val Lys Phe Lys Gln Thr Ser Lys
65          70          75          80
Gly Asn Asp Phe Phe Ser Glu Trp Leu Pro Gly Phe Val Leu Leu Val
          85          90          95
Cys Phe Asp Lys Val Leu Gly Asn Ser Tyr Leu Leu Asn Ser Trp Arg
          100          105          110
Tyr Gly Val Ile Val Gly Ser Asn His Arg Arg Arg His
          115          120          125

```

<210> 5353

<211> 70

<212> PRT

<213> B.fragilis

<400> 5353

```

Ser Met Asp Cys Ile Met Gln Asn Asn Ile Phe Asp Tyr Ala Ala Leu
1          5          10          15
Leu Arg Gln Val Lys Ala Arg Val Ala Leu Ala Gln Lys Lys Ala Ile
          20          25          30
Tyr Ala Ala Asn Gly Glu Met Leu Ser Met Tyr Trp Asp Ile Gly Lys
          35          40          45
Leu Leu Ser Glu Ser Gln Thr Gln Ile Gly Trp Ala Thr Ile Arg Trp
          50          55          60
Ser Ser Cys Pro Val Ile
65          70

```

<210> 5354

<211> 165

<212> PRT

<213> B.fragilis

<400> 5354

```

Lys Arg Arg Cys Arg Asn Met Ala Leu Phe Tyr Lys Ala Val Lys Ser
1          5          10          15
Thr Met Ala Thr Lys Ser Gly Asp Lys Lys Trp His Leu Asn Leu Val
          20          25          30
Lys Val Gly Lys Val Val Ser Thr Gln Gln Leu Ala Glu Met Ile Ala
          35          40          45
Glu Lys Ser Ser Leu Thr Pro Gly Asp Val His Asn Val Val Arg Asn
          50          55          60
Leu Met Thr Ala Met Arg Ser Ala Leu Leu Asp Ser Lys Thr Val Arg
65          70          75          80
Leu Asp Gly Leu Gly Thr Phe Thr Met Lys Ala Arg Thr Arg Gly Arg
          85          90          95
Gly Val Asp Lys Glu Glu Glu Val Asn Pro Asn Gln Val Ala Ala Leu
          100          105          110
Leu Cys His Phe Thr Pro Glu Tyr Thr Arg Pro Ala Ala Ile Gly Thr
          115          120          125

```

Thr Arg Ala Leu Phe Gln Gly Val Glu Phe Gln Lys Ala Ser Gly Ile
 130 135 140
 Gly Ala Ser Gly Asn Asn Gly Ser Gly Gly Gly Asp Gly Asp Ile Val
 145 150 155 160
 Asp Asp Pro Thr Ala
 165

<210> 5355

<211> 416

<212> PRT

<213> B.fragilis

<400> 5355

Pro Leu Ile Phe Ile Met Lys Asn Ser Lys Ile Tyr Pro Trp Ile Val
 1 5 10 15
 Val Ala Leu Leu Trp Gly Val Ala Leu Leu Asn Tyr Met Asp Arg Gln
 20 25 30
 Met Leu Ser Thr Met Lys Asp Ala Met Gln Val Asp Ile Val Glu Leu
 35 40 45
 Gln Ser Ala Thr Asn Phe Gly Arg Leu Met Ala Val Phe Leu Trp Ile
 50 55 60
 Tyr Gly Leu Met Ser Pro Ile Ser Gly Met Ile Ala Asp Arg Leu Asn
 65 70 75 80
 Arg Lys Trp Leu Ile Val Gly Ser Leu Phe Val Trp Ser Phe Val Thr
 85 90 95
 Tyr Leu Met Gly Ile Ala Glu Thr Phe Asn Gln Val Phe Trp Leu Arg
 100 105 110
 Ala Leu Met Gly Val Ser Glu Ala Leu Tyr Ile Pro Ala Gly Leu Ser
 115 120 125
 Leu Ile Ala Asp Tyr His Thr Glu Lys Ser Arg Ser Leu Ala Val Gly
 130 135 140
 Ile His Met Thr Gly Leu Tyr Thr Gly Gln Ala Ile Gly Gly Phe Gly
 145 150 155 160
 Ala Thr Val Ala Ala Ala Phe Ser Trp His Thr Thr Phe His Trp Phe
 165 170 175
 Gly Ile Val Gly Ile Ala Tyr Ala Leu Val Leu Ile Ile Phe Leu Arg
 180 185 190
 Glu Asn Glu Glu His Ala Arg Gly Ile Arg Ala Met His Thr Asp Lys
 195 200 205
 Ser Lys Lys Ile Pro Leu Phe Lys Gly Val Thr Leu Leu Phe Gly Asn
 210 215 220
 Ile Ala Phe Trp Ile Ile Leu Phe Tyr Phe Ala Ala Pro Ser Leu Pro
 225 230 235 240
 Gly Trp Ala Thr Lys Asn Trp Leu Pro Thr Leu Tyr Ala Glu Asn Leu
 245 250 255
 Asp Ile Pro Met Ala Glu Ala Gly Pro Ile Ser Thr Ile Thr Ile Ala
 260 265 270
 Val Ser Ser Phe Ile Gly Val Ile Leu Gly Gly Leu Leu Ser Asp Arg
 275 280 285
 Trp Val Cys Lys Asp Ile Arg Gly Arg Ile Tyr Thr Gly Ala Ile Gly
 290 295 300
 Leu Gly Leu Thr Ile Pro Ala Leu Leu Leu Leu Gly Leu Gly Asn Gly
 305 310 315 320
 Phe Ile Ser Ile Val Gly Ala Gly Phe Leu Phe Gly Val Gly Phe Gly
 325 330 335
 Met Phe Asp Ala Asn Asn Met Pro Ile Leu Cys Gln Phe Val Ser Ala
 340 345 350
 Lys Tyr Arg Ala Thr Ala Tyr Gly Ile Met Asn Met Thr Gly Val Phe
 355 360 365

Ala Gly Ala Val Val Thr Ser Leu Phe Gly Lys Trp Thr Asp Gly Gly
 370 375 380
 Asn Leu Gly Leu Gly Phe Ala Ile Leu Gly Gly Ile Val Leu Leu Ala
 385 390 395 400
 Leu Gly Met Gln Leu Cys Phe Leu Arg Pro His Thr Asp Asn Met Glu
 405 410 415

<210> 5356
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 5356
 Phe Lys Tyr Arg Arg Phe Asn Leu Pro Val Ser Ile Cys Lys Tyr His
 1 5 10 15
 Lys Tyr Gly Leu Phe Ile Pro Glu Ile Ser Val Ser Leu Tyr Arg Thr
 20 25 30
 Ile Thr Ile Ile Ile Met Gln Asp Ile Ile Asn Gly Arg Cys Gly Trp
 35 40 45
 Cys Gly Ser Asp Glu Leu Tyr Val Lys Tyr His Asp Gln Glu Trp Gly
 50 55 60
 Lys Leu Val Thr Asp Asp Lys Thr Leu Phe Glu Phe Leu Val Leu Glu
 65 70 75 80
 Ser Ala Gln Ala Gly Leu Ser Trp Ile Thr Ile Leu Lys Lys Arg Glu
 85 90 95
 Gly Tyr Arg Lys Ala Phe Cys Asn Phe Asp Ala Glu Ser Val Ala Gln
 100 105 110
 Met Thr Asp Glu Asp Val Glu Arg Leu Met His Phe Asp Gly Ile Val
 115 120 125
 Lys Asn Arg Leu Lys Ile Lys Ser Thr Ile Thr Asn Ala Arg Ser Phe
 130 135 140
 Leu Ala Val Gln Lys Glu Phe Gly Ser Phe Tyr Asp Tyr Thr Leu Ser
 145 150 155 160
 Phe Phe Pro Asp Arg Lys Pro Ile Val Asn Thr Phe Gln Ser Leu Ser
 165 170 175
 Glu Ile Pro Val Ser Ser Pro Glu Ser Asp Ala Met Ser Lys Asp Met
 180 185 190
 Lys Lys Arg Gly Phe Lys Phe Phe Gly Thr Thr Ile Cys Tyr Ala His
 195 200 205
 Leu Gln Ala Ser Gly Phe Met Asn Asp His Leu Val Asp Cys Ile Cys
 210 215 220
 Arg Lys Arg
 225

<210> 5357
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 5357
 His Pro Cys Arg Thr Gly Met Gly Arg Gly Ile Val Pro Leu Asn Gln
 1 5 10 15
 Ser Leu Asn Glu Lys Ala Val Val Ile Thr Asp Phe Thr Asp Glu Asn
 20 25 30
 Gly Ile Asp Arg Met Lys Glu Gln Ile Gln Glu Lys Tyr Asn Arg Ile
 35 40 45
 Lys Ala Asp Val Arg Gln Ile Val Ala Asp Glu Leu Gln Arg Ile Gln
 50 55 60
 Asn Asp Pro Ala Leu Ala His Leu Ile

65

70

<210> 5358
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 5358

Asn	Asp	Ile	Arg	Cys	Lys	Ala	Asn	Asn	Arg	Ile	Ser	Lys	Leu	Asp	Arg
1				5					10					15	
Lys	Val	Phe	His	Tyr	Pro	Gly	Val	Pro	Gln	Leu	Tyr	Pro	Phe	Val	Asn
			20					25					30		
Asn	Ser	Ile	Asn	Lys	Ser	Trp	Tyr	Ala	Leu	Arg	Ile	Thr	Tyr	Ser	Arg
		35					40					45			
Glu	Leu	Ala	Phe	Lys	Glu	Tyr	Leu	Asp	Ser	Arg	Gly	Val	Arg	Asn	Phe
	50					55					60				
Leu	Pro	Met	Arg	Tyr	Glu	Tyr	Val	Phe	Arg	Gly	Glu	Arg	Lys	Ile	Arg
65					70				75					80	
Lys	Leu	Val	Pro	Val	Val	His	Asn	Leu	Val	Phe	Val	Tyr	Ala	Thr	Arg
				85					90					95	
Ser	Glu	Val	Asp	Glu	Met	Lys	Ser	Thr	Val	Gly	Ala	Ser	Leu	Pro	Ile
			100					105						110	
Arg	Tyr	Ile	Met	Asp	Arg	Glu	Thr	Arg	Gln	Pro	Ile	Thr	Ile	Pro	Glu
		115					120						125		
Val	Gln	Met	Arg	Ser	Phe	Ile	Ala	Val	Ala	Gly	Asn	Tyr	Asp	Glu	Gln
	130					135					140				
Val	Val	Tyr	Leu	Asp	Pro	Ser	Val	Val	Ser	Met	Lys	Arg	Gly	Asp	Arg
145					150					155				160	
Val	Arg	Val	Thr	Gly	Gly	Ile	Phe	Glu	Gly	Val	Glu	Gly	Glu	Phe	Val
				165					170					175	
Arg	Ile	Lys	Gly	Asp	Arg	Arg	Val	Val	Val	Ser	Ile	Gln	Gly	Val	Met
			180					185					190		
Ala	Val	Ala	Thr	Ala	Phe	Ile	His	Pro	Ser	Leu	Ile	Glu	Leu	Ile	Lys
		195					200					205			

Asn

<210> 5359
 <211> 411
 <212> PRT
 <213> B.fragilis

<400> 5359

Asn	Arg	Gly	Arg	Asn	Lys	Asn	Leu	Tyr	Pro	Leu	Gly	His	Ile	Leu	Leu
1				5					10					15	
Ile	Leu	Ser	Asp	His	Ile	His	His	Ser	Pro	Asp	Ile	Leu	Ile	Cys	Gln
			20					25					30		
Cys	Arg	Ser	Arg	Arg	Gln	Thr	Gln	Ala	Asp	Ile	Glu	Gln	Pro	Leu	Thr
		35					40					45			
Arg	Thr	Ile	Pro	Ile	Glu	Arg	Ser	Ile	Arg	Glu	His	Arg	Leu	Lys	Met
	50					55				60					
His	Arg	Leu	Pro	Gln	Arg	Thr	Cys	Leu	Tyr	Val	Leu	Gly	Val	Gln	Leu
65				70					75					80	
Gln	Thr	Asp	Ile	Leu	Thr	Thr	Leu	Thr	Arg	Lys	Leu	Arg	Ile	Asn	Gln
				85				90						95	
Asn	Thr	Ser	Lys	Pro	Lys	Val	Gly	Ser	Lys	Pro	Arg	Ile	Arg	Val	Leu
			100					105					110		
His	Asp	Arg	Asn	Thr	Arg	His	Ile	Phe	Gln	Gln	Ile	Asn	Ile	Gln	Arg
			115				120						125		


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Val Asn Gly Thr Ala Thr Gly Asn Met Phe Ile Glu Asp Lys His Leu
130 135 140
Pro Thr Thr Asp Thr Arg Thr Asp Val Ala His Thr Val Ile Val Thr
145 150 155 160
Asp Met Gly Met Leu Val Met Arg Ser Gly Ile Thr Ser Leu Arg Ser
165 170 175
Val Glu Leu Cys Leu Ser Gly Leu Leu Phe Arg Thr Thr Asp Gln Ser
180 185 190
Thr Ser Thr Gly Ser Arg Asp His Leu Val Ala Ile Glu Arg Glu Ser
195 200 205
Gly Gln Phe Thr Glu Cys Ala Thr Leu Pro Ser Val Gln Phe Arg Thr
210 215 220
Gln Ser Leu Arg Gly Ile Leu Gln Tyr Gly Asp Thr Ile Thr Thr Arg
225 230 235 240
Asn Ile His Asp Leu Val His Leu Gly Arg His Thr Val Lys Val Asp
245 250 255
Arg Asn Asn Ser Leu Arg Glu Leu Thr Arg Leu Ala Gln Thr Val Leu
260 265 270
Tyr Ser Leu Leu Glu Gln Tyr Arg Ile His Ile Pro Gly Ile Leu Leu
275 280 285
Thr Val His Lys Asn Arg Phe Gly Leu Gln Ile Gly Asn Arg Ile Gly
290 295 300
Arg Gly Gly Lys Ser Lys Ala Leu Ala Asp His Phe Ile Thr Gly Leu
305 310 315 320
His Ile Gln Lys Asn Gln Ala Gln Val Lys Cys Ser Arg Ser Ser Thr
325 330 335
Gln Ser His Tyr Thr Thr Val Phe Met Gln Ile Phe Gly Gln Arg Leu
340 345 350
Leu Lys Ser Ile His Val Arg Ser Gln Arg Asp Asn Pro Val Arg Ile
355 360 365
Lys Ser Leu Phe Tyr Lys Val Leu Leu Thr Ala Thr His Val Ser Lys
370 375 380
Arg Lys Pro Asp Ser Phe Val His Asn Lys Leu Phe Ile Ile Ile Ser
385 390 395 400
Phe Ser Tyr Val Ile Gly Asn Gln Glu Glu Lys
405 410

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<210> 5360

<211> 771

<212> PRT

<213> B.fragilis

<400> 5360

```

Asn Gln Leu Arg Gln Leu Leu Tyr Ile Ile Tyr Asn Lys Val Cys Pro
1 5 10 15
Met Leu Lys Ser Asp Val Ile Trp Pro Asn Ser Arg Arg Phe Lys Ser
20 25 30
Arg Thr Glu Trp Glu Pro Leu Gly Phe Phe Ser Glu Ala Leu Cys Asn
35 40 45
Ser Thr Gln Phe Asp Leu Lys Leu Gly Phe Phe Ser Ser Ser Ala Ile
50 55 60
Asn Val Leu Ala Asp Gly Phe Ala Thr Phe Leu Tyr Asn Gly Gly Lys
65 70 75 80
Met Arg Met Ile Ile Asn Asp Ile Leu Ser Thr Glu Asp Lys Arg Ala
85 90 95
Ile Ile Val Ala Asp Ser Cys Asp Asp Val Asp Tyr Phe Asn Leu Gln
100 105 110
Asp Leu Gly Gly Met Ser Asp Thr Leu Ser Lys Arg Asn Gln His Phe
115 120 125

```

Phe	Glu	Cys	Leu	Ala	Trp	Leu	Ile	Arg	His	Asn	Arg	Ile	Glu	Ile	Lys
130						135					140				
Val	Val	Val	Pro	Lys	Ala	Gly	Glu	Gly	Ile	Ala	His	Ser	Lys	Cys	Gly
145					150					155					160
Val	Phe	Phe	Asp	Gly	Leu	Asn	Arg	Val	Ala	Phe	Asp	Gly	Ser	Cys	Asn
				165					170					175	
Phe	Ser	Lys	Thr	Ala	Leu	Ile	Ala	Asn	Ile	Glu	Ser	Ile	Thr	Ala	Phe
			180					185					190		
Cys	Asp	Trp	Asp	Gly	Gln	Ser	Asp	Val	Cys	Arg	Ile	Lys	Asp	Val	Val
		195					200					205			
Asp	Asp	Phe	Glu	Arg	Thr	Phe	Ser	Gly	Asn	Asp	Glu	Ser	Val	Thr	Tyr
	210					215					220				
Leu	Asn	Thr	Asp	His	Ile	Arg	Ile	His	Ile	Thr	Asp	Thr	Tyr	Lys	Asn
225					230					235					240
Lys	Asp	Ile	Gln	Glu	Leu	Leu	Ala	Asp	Glu	Ala	Gln	Leu	Ile	Asn	Asp
				245					250					255	
Arg	Leu	Glu	Asn	Asp	Leu	Pro	Lys	Thr	Val	Thr	Ala	Phe	Leu	Gly	Arg
			260					265					270		
Ala	Lys	Asn	Lys	Val	Lys	Ser	Ile	Ile	Glu	Arg	Ile	His	Gln	Asn	Glu
		275					280					285			
Ile	Gln	Arg	Gly	Lys	Glu	Ala	Pro	Arg	Phe	Pro	Tyr	Ser	Gln	Gly	
290					295					300					
Pro	Arg	Glu	Tyr	Gln	Gln	Leu	Ala	Phe	Glu	Asn	Trp	Lys	Ala	Asn	Lys
305				310						315					320
Gln	Lys	Gly	Leu	Phe	Ala	Met	Ala	Thr	Gly	Thr	Gly	Lys	Thr	Ile	Thr
				325					330					335	
Ser	Leu	Asn	Cys	Leu	Leu	Glu	Ile	Tyr	Lys	Arg	Cys	Gly	Tyr	Tyr	Lys
		340						345				350			
Ala	Ile	Ile	Leu	Val	Pro	Thr	Ile	Thr	Leu	Val	Gly	Gln	Trp	Glu	Glu
		355					360					365			
Glu	Cys	Lys	Lys	Phe	Asn	Phe	Lys	Asn	Val	Ile	Arg	Val	Cys	Ser	Lys
370					375					380					
Asn	Ser	Lys	Trp	Ala	Glu	Gln	Ile	Glu	Thr	Ile	Thr	Leu	Ser	Glu	Arg
385				390						395					400
Leu	Lys	Gly	Ser	Asp	Asn	Asn	Leu	Ser	Tyr	Ile	Ile	Ile	Ser	Thr	Tyr
				405					410					415	
Ala	Ser	Phe	Ile	Lys	Asp	Lys	Val	Phe	Lys	Ser	Leu	Ser	Val	Phe	Pro
		420						425					430		
Lys	Thr	Lys	Leu	Leu	Leu	Ile	Ala	Asp	Glu	Ala	His	Asn	Met	Gly	Ser
		435					440					445			
Arg	Arg	Met	Leu	Asn	Ile	Leu	Asp	Gly	Ile	Pro	Tyr	Leu	Arg	Arg	Ile
	450					455					460				
Gly	Leu	Ser	Ala	Thr	Pro	Glu	Arg	Gln	Phe	Glu	Glu	Glu	Ala	Asn	Gln
465					470					475					480
Thr	Leu	Tyr	His	Phe	Phe	Gly	Ala	Glu	Asn	Gly	Phe	Thr	Tyr	Glu	Tyr
				485					490					495	
Ser	Met	Gln	Glu	Ala	Ile	Asp	Lys	Gly	Val	Leu	Cys	Arg	Tyr	Tyr	Tyr
		500						505					510		
Tyr	Pro	His	Val	Val	Arg	Leu	Thr	Met	Ser	Glu	Met	Glu	Glu	Tyr	Met
		515					520					525			
Arg	Ile	Ser	Val	Gln	Leu	Ala	Lys	Phe	Phe	Asn	Asn	Asn	His	Phe	Ala
	530					535						540			
Asp	Ser	Asn	Glu	Ile	Leu	Thr	Ala	Leu	Leu	Leu	Lys	Arg	Lys	Arg	Ile
545					550					555					560
Ile	His	Lys	Ala	Glu	Asn	Lys	Leu	Glu	Val	Phe	Arg	Asn	Ile	Leu	Glu
				565					570					575	
Gln	Arg	Phe	Gln	Glu	Lys	Gly	Asn	Leu	Lys	Tyr	Thr	Leu	Val	Tyr	Val
				580				585					590		
Pro	Glu	Gly	Leu	Lys	Pro	Asp	Thr	Ala	Asp	Ala	Asp	Val	Tyr	Asp	Asp

595	600	605
Thr Asp Gln Leu Gln Asp Asp Tyr Ser Glu Lys Leu Ile Asn Glu		
610	615	620
Tyr Thr Ala Val Val Ser Gly Ile Asp Ser Lys Val Thr Val Arg Lys		
625	630	635
Phe Thr Ser Gly Ile Lys Glu Arg Glu Glu Leu Leu Lys Gly Phe Ala		
645	650	655
Asp Gly Asp Ile Glu Val Leu Thr Ser Met Lys Cys Leu Asp Glu Gly		
660	665	670
Val Asp Val Pro Arg Ser Glu Leu Ala Ile Phe Cys Ala Ser Thr Gly		
675	680	685
Asn Pro Arg Gln Phe Ile Gln Arg Arg Gly Arg Ile Leu Arg Lys His		
690	695	700
Pro Asp Lys His Met Ala Val Ile His Asp Leu Val Val Ala Pro Glu		
705	710	715
Val Asn Ile Gly Glu Gly Ser Tyr Ala Met Glu Arg Ser Leu Met Ala		
725	730	735
Thr Glu Leu Arg Arg Val Arg Asn Phe Ser Leu Leu Ser Glu Asn Ser		
740	745	750
Asp Asp Thr Ile Asn Glu Leu Glu Asp Ile Met Asn Tyr Tyr Asn Leu		
755	760	765
Ser Leu Phe		
770		

<210> 5361
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 5361
Ile Lys Lys Arg Phe Leu Phe Cys Glu Ile Phe Cys Leu Leu Asn Ser
1 5 10 15
Ser Ile Val Leu Ser Ile Asn Ser Ile Ala Thr Gly Ala Cys Arg Lys
20 25 30
Ala Thr Arg Phe Ala Ala Lys Asp Ser Ser Asn Val Glu Gln Cys Thr
35 40 45
His Ile Thr Ala Phe Ser Val Gly Gly Arg Gly Thr Asn Phe Ser Phe
50 55 60
Asn Ser Val Ile Lys Ala Asn Val Pro Ser Glu Pro Ala Asn Asn Leu
65 70 75 80
Gln Arg Leu Lys Asp Ser Glu Gln Phe Leu Ser Lys
85 90

<210> 5362
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 5362
Lys Ile Phe Phe Asn Lys Tyr Ser Met Gln Asp Tyr Phe Ala His Glu
1 5 10 15
Thr Ala Thr Val Asp Asp Gly Cys Arg Ile Gly Ala Gly Thr Lys Ile
20 25 30
Trp His Tyr Ser His Ile Met Thr Gly Cys Val Leu Gly Glu Arg Cys
35 40 45
Asn Ile Gly Gln Asn Val Val Ile Ser Pro Asp Val Val Leu Gly Asn
50 55 60
Asn Val Lys Val Gln Asn Asn Val Ser Val Tyr Thr Gly Val Thr Cys
65 70 75 80

Glu Asp Asp Val Phe Leu Gly Pro Ser Cys Val Phe Thr Asn Val Ile
 85 90 95
 Asn Pro Arg Ser Ala Val Asn Arg Lys Ser Glu Tyr Ala Lys Thr Arg
 100 105 110
 Val Gly Lys Gly Ala Thr Ile Gly Ala Asn Ala Thr Ile Val Cys Gly
 115 120 125
 His Asp Ile Gly Glu Phe Ala Phe Ile Gly Ala Gly Ala Val Val Thr
 130 135 140
 Lys Thr Val Pro Pro Tyr Ala Leu Leu Val Gly Asn Pro Ala Arg Gln
 145 150 155 160
 Ile Gly Trp Met Ser Glu His Gly Tyr Arg Leu Glu Phe Asp Glu Arg
 165 170 175
 Gly Ile Ala Glu Cys Leu Glu Ser Lys Glu Cys Tyr Gln Leu Arg Asp
 180 185 190
 Gly Lys Val Phe Lys Met
 195

<210> 5363
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 5363
 Ile Arg Leu Arg Ile Gly Ile Asp Lys Ser Glu Ile Lys Leu Ala Lys
 1 5 10 15
 Thr Phe Pro Glu Asn Lys Thr Thr Thr Leu Phe Lys Asn Gly Glu Leu
 20 25 30
 Ser Ile Phe Leu Leu Ile Arg Ile Ile Thr Leu Ile Tyr Pro Ser Ile
 35 40 45
 Leu Asn Asp Lys Leu Pro Leu Lys Ser Pro Phe His Phe Pro Asn Ile
 50 55 60
 Ile Leu Ser Trp His Leu Ala Tyr Leu Leu
 65 70

<210> 5364
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 5364
 Lys Ser Ser Arg Asp Lys Asn Arg Phe Phe Val Asp Tyr Leu Thr Trp
 1 5 10 15
 Asn Thr Asn Gly Arg Trp Ala Ala Glu Tyr Lys Asp Gly Val Phe Tyr
 20 25 30
 His Tyr Glu Asn Gly Asp Thr Thr Lys Cys His Thr Asp Ser Ile Leu
 35 40 45
 Asn Tyr Ile Ser Asp Ala Gly Glu Asn Trp Gln Met Lys Ile Glu Gly
 50 55 60
 Asp His Phe Val His Ala Pro Asn Gly Asp Tyr Ser Arg Ala His Thr
 65 70 75 80
 Asp Thr Val Met His Tyr Ile Gly Trp Asp Gly Arg Lys Trp Arg Ala
 85 90 95
 Glu Leu Leu Thr Leu Ile Asp Gly Leu His Pro Asp Leu Ala Ser Asp
 100 105 110
 Cys Pro Glu Gly Met Leu Leu Lys Ala Asp Asn Ala Asp Ala Val Tyr
 115 120 125
 Leu Val Gln Phe Gly Ser Leu His His Ile Pro Asn Pro Asp Val Tyr
 130 135 140
 Phe Ala Leu Phe Pro Ala Trp Asp Lys Ile Thr Val Lys Ser Gln Glu

145		150		155		160									
Glu	Val	Asn	Ala	Ile	Pro	Val	Gly	Ile	Pro	Leu	Ser	Leu	Trp	Met	Leu
		165			170									175	
Val															

<210> 5365
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 5365
 Ile Ser Ala Ser Leu Leu Leu His Pro Ile Thr Leu Val Gly Leu Thr
 1 5 10 15
 Ala Leu Ser Val Glu Thr Ile Thr Asn Phe Ser Thr Pro Tyr Leu Thr
 20 25 30
 Ala Lys Ser Ala Ile Ile Arg Val Pro Ser Thr Phe Thr Cys Met Ala
 35 40 45
 Ser Asp Thr Leu Ser Ser Ile Met Gly Thr Cys Leu
 50 55 60

<210> 5366
 <211> 446
 <212> PRT
 <213> B.fragilis

<400> 5366
 Arg Trp Gln Ser Ile Gln Asn Val Ile Phe Asn Phe Lys Arg Pro Arg
 1 5 10 15
 Val Met Tyr Asn Lys Leu Val Asn Lys Glu Ala Lys Leu Ala Leu Val
 20 25 30
 Gly Leu Gly Tyr Val Gly Leu Pro Ile Ala Leu Glu Phe Ala Gln Lys
 35 40 45
 Ile Ser Val Ile Gly Phe Asp Ile Asn Glu Asp Arg Leu Ala Lys Met
 50 55 60
 Arg Glu Gly Ile Asp Pro Cys Gly Glu Leu Asp Ser Ser Ala Phe Glu
 65 70 75 80
 Asn Val Asp Ile Glu Phe Thr Ser Ser Ile Glu Lys Leu Lys Glu Ala
 85 90 95
 Ser Phe Phe Ile Val Ala Val Pro Thr Pro Ile Asp Lys Tyr Asn Lys
 100 105 110
 Pro Asp Leu Thr Pro Leu Leu Gly Ala Ser Arg Ser Val Ala Lys Ala
 115 120 125
 Leu Lys Pro Gly Asp Tyr Ile Val Tyr Glu Ser Thr Val Tyr Pro Gly
 130 135 140
 Cys Thr Glu Glu Asp Cys Leu Pro Val Leu Glu Glu Val Ser Gly Leu
 145 150 155 160
 Lys Ala Gly Ile Asp Phe Lys Tyr Gly Tyr Ser Pro Glu Arg Ile Asn
 165 170 175
 Pro Gly Glu Lys Val His Thr Leu Pro Asn Thr Ile Lys Ile Val Ser
 180 185 190
 Gly Cys Asp Pro Glu Ala Leu Asp Thr Val Ala Arg Val Tyr Glu Leu
 195 200 205
 Val Val Lys Pro Gly Val His Arg Ala Pro Asn Val Lys Val Ala Glu
 210 215 220
 Ala Ala Lys Ile Ile Glu Asn Thr Gln Arg Asp Val Asn Ile Ala Leu
 225 230 235 240
 Met Asn Glu Leu Ser Ile Ile Phe Ser Arg Ile Gly Ile Asn Thr Tyr
 245 250 255

145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255

Asn Ala Glu Glu Gly Tyr Leu Lys Gln Leu Gln Thr Phe Lys Gly Trp
 225 230 235 240
 Asp Phe Val Asp Phe Tyr Gly Arg Ile Ser Lys Glu Lys Val Leu Leu
 245 250 255
 Leu Tyr Asp Lys Val Ala Ile Gly Met Ala Ile His Asp Tyr Thr Leu
 260 265 270
 Asn Val Gly Gly Lys Lys Gly Gly Leu Gly Phe Ile Lys Asn Phe Glu
 275 280 285
 Tyr Met Glu Ala Gly Ile Pro Leu Ile Cys Thr Asp Phe Asp Ile Trp
 290 295 300
 Lys Glu Ile Val Glu Glu Tyr Tyr Cys Gly Ile Cys Val Asn Pro His
 305 310 315 320
 Asp Val Asn Ser Ile Thr Gly Ala Ile Gln Tyr Leu Ile Asp Asn Pro
 325 330 335
 Val Ile Ala Arg Lys Met Gly Asp Asn Gly Arg Arg Ala Val Lys Glu
 340 345 350
 Lys Phe Asn Trp Glu Thr Gln Glu Glu Ile Leu Leu Gln Leu Tyr Asp
 355 360 365
 Ser Leu
 370

<210> 5368

<211> 180

<212> PRT

<213> B.fragilis

<400> 5368

Cys Asp Phe Met Asn Asp Gly Glu Arg Lys Glu Thr Val Leu Ser Phe
 1 5 10 15
 Phe Tyr Arg Lys Ile Leu Lys Lys Ser Ser Pro Pro Tyr Tyr Cys Tyr
 20 25 30
 Tyr Ser Leu Leu Thr Ile Cys Ala Lys Pro Ile Arg Lys Trp Phe Ser
 35 40 45
 Val Val Val Ile Pro Ile Ile Pro Phe Ser Asn Leu Arg Val Gln Cys
 50 55 60
 Tyr Arg Trp Cys Gly Tyr Lys Ile Gly Arg His Thr Phe Ile Gly Met
 65 70 75 80
 Arg Cys Tyr Leu Asp Asp Met Cys Tyr Asp Leu Ile Glu Ile Gly Glu
 85 90 95
 Asn Val Thr Ile Ser Tyr Gly Val Phe Phe Ala Cys His Gly Arg Lys
 100 105 110
 Gln Gly His Asn Arg Ile Ile Ile Lys Asp Gly Ala Tyr Ile Gly Met
 115 120 125
 Asn Ser Ser Ile Ile Ser Arg Arg Glu Glu Gly Leu Ile Ile Gly Lys
 130 135 140
 Glu Ala Ile Val Gly Ala Cys Ser Leu Val Asn Arg Ser Val Pro Asp
 145 150 155 160
 Asn Lys Thr Val Val Gly Val Pro Ala Lys Glu Leu Asn Ala Val Leu
 165 170 175
 His Gly Asn Lys
 180

<210> 5369

<211> 399

<212> PRT

<213> B.fragilis

<400> 5369

Lys Glu Ile Ile Ile Leu Trp Gln Asn Phe Leu Cys Gln Ser Ile Arg

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1           5           10           15
Leu Ala Gly Asn Lys Val Thr Asp Ile Ile Met Lys Leu Gln Met Val
20           25           30
Asp Leu His Gly Gln Tyr Leu Asn Ile Lys Pro Glu Val Asp Ala Gly
35           40           45
Ile Arg Gln Val Ile Glu Thr Ser Ala Phe Ile Asn Gly Pro Gln Val
50           55           60
Lys Glu Phe Ala Glu Asn Leu Lys Ala Tyr Met Gly Ser Lys Tyr Val
65           70           75           80
Ile Thr Cys Gly Asn Gly Thr Asp Ala Leu Gln Ile Ala Leu Met Ala
85           90           95
Leu Asp Leu Lys Pro Gly Asp Glu Val Ile Val Pro Ala Phe Thr Tyr
100          105          110
Val Ala Ser Ala Glu Val Ile Gly Leu Leu Gly Leu Ile Pro Val Met
115          120          125
Val Asp Val Asp Tyr Ala Thr Phe Asn Val Thr Val Ser Asn Leu Glu
130          135          140
Lys Ala Leu Ser Pro Lys Thr Lys Ala Ile Ile Pro Val His Leu Phe
145          150          155          160
Gly Gln Ser Cys Asp Met Glu Pro Ile Met Gln Phe Ala Lys Gln His
165          170          175
Gly Ile Tyr Val Ile Glu Asp Asn Ala Gln Ala Ile Gly Ala Val Tyr
180          185          190
Thr Phe Ser Asp Gly Ser Lys Lys His Thr Gly Ala Ile Gly His Ile
195          200          205
Gly Cys Thr Ser Phe Phe Pro Ser Lys Asn Leu Gly Cys Tyr Gly Asp
210          215          220
Gly Gly Ala Ile Phe Thr Asp Asp Asp Glu Leu Ala Glu Arg Leu Arg
225          230          235          240
Met Ile Ala Asn His Gly Gln Gln Val Lys Tyr His His Lys Val Ile
245          250          255
Gly Cys Asn Ser Arg Leu Asp Thr Leu Gln Ala Ala Ile Leu Asn Val
260          265          270
Lys Leu Lys His Leu Asp Glu Tyr Ser His Ala Arg His Glu Ala Ala
275          280          285
Gln Tyr Tyr Thr Phe Gln Leu Gln Gly Val Lys Gly Ile Ile Thr Pro
290          295          300
Glu Glu Leu Pro Leu Ser Thr His Val Tyr His Gln Tyr Thr Leu Lys
305          310          315          320
Val Leu Asp Gly Lys Arg Asp Val Leu Lys Gln His Leu Ala Asp Ala
325          330          335
Gly Ile Pro Ser Met Ile Tyr Tyr Pro Leu Pro Leu Gln Gln Gln Glu
340          345          350
Ala Phe Gln Thr Ile Ala Arg Ala Ala Glu Pro Leu Asp Thr Ala Glu
355          360          365
Lys Leu Ala Tyr Ser Val Leu Ser Leu Pro Ile His Thr Glu Leu Ser
370          375          380
Thr Glu Gln Gln Asp Leu Val Ile Asn Ser Ile Lys Asp Phe Phe
385          390          395

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<210> 5370

<211> 373

<212> PRT

<213> B.fragilis

<400> 5370

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Val Ile Thr Met Thr Glu Asp Lys Asn Ile Asn Lys Thr Thr Pro Gln
1           5           10           15
Ser Glu Glu Gln Glu Ile Asp Leu Ile Glu Leu Ala Gln Lys Val Trp

```


20				25				30							
Ala	Gly	Arg	Lys	Leu	Val	Leu	Lys	Val	Cys	Gly	Val	Ala	Val	Leu	Val
35				40				45							
Gly	Leu	Val	Val	Ala	Phe	Ser	Ile	Pro	Lys	Glu	Tyr	Ser	Thr	Ser	Val
50				55				60							
Thr	Leu	Ala	Pro	Glu	Thr	Gly	Ser	Lys	Ser	Ser	Thr	Gly	Gly	Met	Gly
65				70				75				80			
Ala	Leu	Ala	Ala	Met	Asp	Gly	Ile	Asn	Leu	Gly	Ser	Ser	Thr	Gly	Glu
85				90				95							
Asp	Ala	Leu	Ser	Pro	Glu	Leu	Tyr	Pro	Asp	Ile	Val	Ser	Ser	Thr	Pro
100				105				110							
Phe	Leu	Leu	Glu	Met	Phe	Asp	Val	Lys	Val	Ala	Asp	Gln	Lys	Gly	Lys
115				120				125							
Ile	Asn	Thr	Thr	Leu	Tyr	Glu	Tyr	Leu	Asp	Lys	Tyr	Gln	Arg	Ala	Pro
130				135				140							
Trp	Trp	Gly	Ala	Val	Ala	Ser	Ala	Pro	Phe	Lys	Ala	Leu	Gly	Trp	Val
145				150				155				160			
Val	Ser	Leu	Phe	Lys	Asp	Ala	Pro	Glu	Glu	Gln	Gly	Asp	Ala	Lys	Ile
165				170				175							
Asp	Pro	Phe	Tyr	Leu	Thr	Ala	Asp	Gln	Ala	Gly	Ile	Ala	Asp	Ala	Leu
180				185				190							
Ser	His	Arg	Ile	Ser	Val	Ser	Val	Asp	Lys	Lys	Thr	Gly	Val	Thr	Thr
195				200				205							
Leu	Thr	Val	Thr	Met	Gln	Asp	Pro	Leu	Ile	Ser	Ala	Ala	Leu	Thr	Asp
210				215				220							
Thr	Val	Met	His	Cys	Leu	Gln	Asn	Tyr	Ile	Thr	Asp	Tyr	Arg	Thr	Asn
225				230				235				240			
Lys	Ala	Arg	His	Asp	Leu	Ala	Phe	Thr	Glu	Lys	Leu	Phe	Asn	Glu	Ala
245				250				255							
Gln	Glu	Asn	Tyr	Tyr	Glu	Ala	Gln	Gln	Lys	Tyr	Ala	Arg	Phe	Met	Asp
260				265				270							
Gly	Asn	Gln	Asn	Ile	Ile	Met	Gln	Ser	Phe	Arg	Thr	Glu	Gln	Glu	Arg
275				280				285							
Leu	Gln	Asn	Glu	Met	Asn	Leu	Ala	Tyr	Gly	Val	Phe	Thr	Gln	Val	Ser
290				295				300							
Gln	Gln	Leu	Gln	Leu	Ala	Lys	Ala	Lys	Val	Gln	Glu	Ile	Thr	Pro	Val
305				310				315				320			
Tyr	Thr	Val	Val	Gln	Pro	Ala	Thr	Val	Pro	Leu	Arg	Pro	Ala	Lys	Pro
325				330				335							
Asn	Lys	Ile	Met	Ile	Leu	Ile	Gly	Phe	Val	Phe	Leu	Ala	Gly	Val	Gly
340				345				350							
Ser	Ile	Gly	Trp	Ile	Leu	Phe	Val	Lys	Asp	Leu	Leu	Asn	Gly	Trp	Lys
355				360				365							
Lys	Gln	Pro	Glu	Lys											
370															

<210> 5371

<211> 226

<212> PRT

<213> B.fragilis

<400> 5371

Phe	Cys	Ala	Ile	Ile	Leu	Arg	Met	Met	Asn	Met	Lys	Pro	Ile	Ile	Ser
1	5			10			15								
Pro	Ser	Ile	Leu	Ser	Ala	Asp	Phe	Ala	Tyr	Leu	Ala	Lys	Asp	Ile	Glu
20				25				30							
Met	Ile	Asn	Arg	Ser	Glu	Ala	Asp	Trp	Val	His	Ile	Asp	Ile	Met	Asp
35				40				45							
Gly	Val	Phe	Val	Pro	Asn	Ile	Ser	Phe	Gly	Phe	Pro	Val	Leu	Lys	Tyr

50	55	60
Val Ala Lys Leu Thr	Ser Lys Pro Leu Asp	Val His Leu Met Ile Val
65	70	75
Asn Pro Glu Lys Phe	Ile Pro Glu Val Lys	Ala Leu Gly Ala His Ile
85	90	95
Met Asn Val His Tyr	Glu Ala Cys Pro His	Leu His Arg Val Val Gln
100	105	110
Leu Ile Arg Glu Ala	Gly Met Gln Pro Ala	Val Thr Ile Asn Pro Ala
115	120	125
Thr Pro Ile Thr Leu	Leu Gln Asp Ile Ile	Arg Asp Val Tyr Met Val
130	135	140
Leu Val Met Ser Val	Asn Pro Gly Phe Gly	Gly Gln Lys Phe Ile Glu
145	150	155
His Ser Val Glu Lys	Val Lys Glu Leu Arg	Glu Leu Ile Glu Arg Thr
165	170	175
Gly Ser Lys Ala Leu	Ile Glu Val Asp Gly	Gly Val Asn Leu Glu Thr
180	185	190
Gly Ala Arg Leu Ile	Ala Ala Gly Ala Asp	Ala Leu Val Ala Gly Asn
195	200	205
Ala Ile Phe Ala Ala	Glu Asn Pro Glu Gly	Met Ile His Ala Met Lys
210	215	220
Gly Leu		
225		

<210> 5372

<211> 348

<212> PRT

<213> B.fragilis

<400> 5372

Ile Phe Tyr Met	Asn Lys Lys Arg	Lys Lys Ile Phe	Leu Ser Ile Leu
1	5	10	15
Ala Thr Phe Phe	Phe Ile Cys Ile	Ala Gly Ala Gly	Thr Val Tyr Tyr
20	25	30	
Tyr Leu Phe Tyr	Pro Gln Phe His	Pro Ser Lys Thr	Thr Tyr Ile Tyr
35	40	45	
Ile Asp Arg Asp	Asp Thr Thr Asp	Ser Ile Phe Asn	Lys Ile Lys Lys
50	55	60	
Gln Gly Asn Pro	His Ser Phe Asn	Gly Phe Lys Trp	Met Ser His Phe
65	70	75	80
Arg Glu Tyr Ser	Lys Asn Ile His	Thr Gly Arg Tyr	Ala Ile Lys Pro
85	90	95	
Gly Asp Ser Thr	Tyr Gln Leu Tyr	Ser Arg Leu Ser	Arg Gly Tyr Gln
100	105	110	
Thr Pro Val Asn	Leu Thr Ile Gly	Ser Val Arg Thr	Leu Asp Arg Leu
115	120	125	
Val Arg Ser Val	Gly Lys Gln Leu	Met Ile Asp Ser	Ala Glu Ile Ala
130	135	140	
Met Ala Leu Tyr	Asp Ser Ile Phe	Leu Glu Lys Met	Gly Tyr Thr Glu
145	150	155	160
Ala Thr Ile Pro	Cys Leu Phe Ile	Pro Glu Thr Tyr	Gln Val Tyr Trp
165	170	175	
Asp Val Ser Ala	Ala Asp Phe Leu	Ala Arg Met Lys	Lys Glu His Asp
180	185	190	
Lys Phe Trp Asn	Lys Asp Arg Leu	Ser Lys Ala Gln	Ala Ile Gly Met
195	200	205	
Thr Pro Glu Glu	Ile Cys Thr Leu	Ala Ser Ile Val	Glu Glu Glu Thr
210	215	220	
Asn Asn Asn Ala	Glu Lys Pro Met	Val Ala Gly Leu	Tyr Ile Asn Arg

225		230		235		240									
Leu	His	Ala	Gly	Met	Pro	Leu	Gln	Ala	Asp	Pro	Thr	Ile	Lys	Phe	Ala
		245							250					255	
Leu	Gln	Asp	Phe	Gly	Leu	Arg	Arg	Ile	Thr	Asn	Gln	His	Leu	Asp	Val
		260						265					270		
Gln	Ser	Pro	Tyr	Asn	Thr	Tyr	Leu	Asn	Ala	Gly	Leu	Pro	Pro	Gly	Pro
		275					280					285			
Ile	Arg	Ile	Pro	Ser	Pro	Lys	Gly	Leu	Asp	Ser	Val	Leu	Asn	Tyr	Val
	290					295					300				
Lys	His	Asn	Tyr	Ile	Tyr	Met	Cys	Ala	Lys	Glu	Asp	Phe	Ser	Gly	Thr
305					310					315					320
His	Asn	Phe	Ala	Ser	Asn	Tyr	Ala	Asp	His	Met	Val	Asn	Ala	Arg	Lys
		325						330					335		
Tyr	Trp	Lys	Ala	Leu	Asn	Glu	Arg	Lys	Ile	Phe	Lys				
		340						345							

<210> 5373

<211> 296

<212> PRT

<213> B.fragilis

<400> 5373

Ile	Phe	Asn	Ile	Met	Lys	Asn	Lys	Arg	Lys	Arg	Pro	Ser	Lys	Lys	Gln
1			5					10					15		
His	His	Asn	Ser	Phe	Lys	Ser	Phe	Trp	Ile	Ile	Ala	Leu	Phe	Ala	Ile
		20					25					30			
Leu	Pro	Leu	Ile	Tyr	Gly	Val	Tyr	Leu	Cys	Thr	Pro	Glu	Ile	Gln	Ala
	35				40						45				
Val	Phe	Phe	Gln	Ala	Thr	Lys	Val	Ser	Arg	Pro	Asn	Val	Ala	Arg	Pro
	50				55					60					
Asn	Tyr	Ser	His	Asp	Glu	Asn	Leu	Lys	Ile	Pro	Val	Ser	Gln	Phe	Pro
65				70					75						80
Leu	Thr	Glu	Gln	Ile	Ile	His	His	Lys	Gly	Tyr	Thr	Val	Ser	Tyr	Asn
			85					90					95		
Lys	Asp	Lys	Lys	Ile	Pro	Asn	Trp	Val	Ala	Tyr	Glu	Leu	Thr	Lys	Gln
		100					105					110			
Lys	Thr	Gln	Gly	Asn	Ile	Lys	Arg	Asn	Glu	Arg	Phe	Ile	Ala	Asp	Pro
	115					120						125			
Val	Val	Lys	Gly	Gly	Met	Ala	Asn	Asn	Ser	Asp	Tyr	Ser	Arg	Ser	Gly
	130				135					140					
Phe	Asp	Lys	Gly	His	Met	Ala	Pro	Ala	Ala	Asp	Met	Lys	Trp	Ser	Asn
145				150						155					160
Glu	Ala	Met	Lys	Glu	Ser	Phe	Tyr	Phe	Ser	Asn	Val	Cys	Pro	Gln	His
		165					170							175	
Pro	Glu	Leu	Asn	Arg	Arg	Lys	Trp	Lys	Thr	Leu	Glu	Asp	Lys	Val	Arg
		180				185						190			
Glu	Trp	Ala	Val	Ala	Asp	Ser	Ala	Ile	Leu	Ile	Ile	Cys	Gly	Pro	Val
	195				200							205			
Thr	Asn	Lys	Lys	Ser	Pro	Val	Ile	Gly	Lys	Ser	Arg	Val	Thr	Val	Pro
	210				215						220				
Ser	Lys	Phe	Phe	Lys	Val	Ile	Leu	Ser	Leu	His	Gly	Ser	Thr	Pro	Lys
225				230					235						240
Ala	Ile	Gly	Phe	Ile	Phe	Lys	Asn	Glu	Arg	Ala	Ile	Ala	Pro	Leu	Arg
		245						250						255	
Asn	Tyr	Ala	Val	Ser	Ile	Asp	Ser	Ile	Glu	Gln	Leu	Thr	Gly	Leu	Asp
		260					265						270		
Phe	Phe	Ser	Ser	Leu	Pro	Asp	Ser	Leu	Glu	Asn	Glu	Ile	Glu	Ser	Arg
		275				280						285			
Ile	Asp	Thr	Thr	Leu	Trp	Ser	Ile								

290

295

<210> 5374

<211> 410

<212> PRT

<213> B.fragilis

<400> 5374

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Phe Met Asn Ile Leu Leu Ile Asn His Tyr Ala Gly Tyr Pro Asn Leu
1      5      10      15
Gly Met Glu Tyr Arg Pro Tyr Tyr Leu Ser Lys Glu Trp Val Arg Met
      20      25      30
Gly His Gln Val Arg Val Leu Ala Ala Asn Tyr Ser His Leu Arg Ile
      35      40      45
Lys Gln Pro Leu Asp Ser Phe Ser Val Ile Asp Gly Ile His Tyr Arg
      50      55      60
Trp Ile Ser Ala Gly Arg Tyr Ser Gly Asn Gly Ala Lys Arg Val Cys
65      70      75      80
Ser Met Phe Cys Phe Val Leu Lys Leu Arg Leu Tyr Phe Arg Asn Tyr
      85      90      95
Leu Asp Gly Phe Ile Pro Asp Leu Val Ile Ala Ser Ser Thr Tyr Pro
      100      105      110
Leu Asp Ile Tyr Pro Ala His Lys Ile Ala Gln Tyr Tyr His Ala Lys
      115      120      125
Leu Ile Tyr Glu Val His Asp Leu Trp Pro Leu Ser Pro Ile Glu Ile
      130      135      140
Gly Gly Tyr Ser Lys Tyr His Pro Phe Ile Ala Leu Leu Gln Lys Ala
145      150      155      160
Glu Asn Asp Ala Tyr Lys Phe Ser Asp Lys Val Ile Ser Leu Leu Pro
      165      170      175
Asn Ala Cys Ser His Met Val Ser His Gly Met Asp Ala Asn Lys Phe
      180      185      190
Val Tyr Ile Pro Asn Gly Tyr Asp Pro Glu Glu Trp Thr Ser Gln Cys
      195      200      205
Asp Leu Ser Pro Leu His Met Gln Phe Ile Ser Glu Leu Lys Asn Lys
      210      215      220
Gly Lys Lys Val Ile Gly Tyr Ala Gly Gly His Ala Lys Ser Asn Ala
225      230      235      240
Leu Asp Tyr Leu Leu Glu Ala Met Lys Ile Val Phe Asp Lys Asn Gln
      245      250      255
Asn Ile Val Cys Leu Leu Val Gly Asn Gly Gln Glu Lys Gly Arg Leu
      260      265      270
Val Glu Arg Val Gln Lys Glu Gly Ile Lys Asn Ile Tyr Phe Leu Asp
      275      280      285
Pro Val Pro Lys Lys Lys Ile Pro Glu Leu Leu Asn Gln Met Asp Val
      290      295      300
Leu Tyr Ile Gly Trp Glu Lys Asn Pro Leu Tyr Arg Phe Gly Ile Ser
305      310      315      320
Pro Asn Lys Leu Ile Asp Tyr Met Met Ser Gln Lys Pro Ile Leu His
      325      330      335
Ser Val Cys Ala Ala Asn Asp Trp Val Lys Glu Ala Asp Cys Gly Ile
      340      345      350
Thr Val Asn Ala Glu Ser Pro Gln Glu Ile Ala Ala Gly Ile Ile Glu
      355      360      365
Ile Phe Ser Phe Ser Asp Val Glu Leu Ile Asn Lys Gly Gly Arg Gly
      370      375      380
Arg Lys Phe Ala Glu Glu Asn Leu Ser Tyr Pro Phe Leu Ala Lys Lys
385      390      395      400
Phe Ile Glu Glu Cys Ile Asn Asn Arg Val

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405

410

<210> 5375
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 5375

Asn	Tyr	Tyr	Ile	Cys	Asn	Gln	Thr	Lys	Lys	Thr	Leu	Ile	Met	Pro	Asn	
1				5					10					15		
Phe	Phe	Lys	Ser	Phe	Phe	Ala	Gly	Lys	Thr	Glu	Asn	Pro	Glu	Glu	Glu	
			20					25				30				
Lys	Gln	Lys	Asn	Ala	Lys	Lys	Asn	Phe	Glu	Ile	Phe	Lys	Tyr	Asp	Gly	
			35				40					45				
Leu	Arg	Ala	Gln	Arg	Met	Gly	Arg	Pro	Asp	Tyr	Ala	Ile	Lys	Cys	Phe	
			50			55					60					
Asn	Glu	Ala	Leu	Ala	Ile	Glu	Glu	Asp	Phe	Glu	Thr	Leu	Asn	Tyr	Leu	
65					70					75					80	
Ser	Gln	Leu	Tyr	Ile	Gln	Thr	Gly	Glu	Phe	Gly	Lys	Ala	His	Glu	Leu	
				85				90						95		
Leu	Glu	Arg	Met	Ile	Ala	Leu	Glu	Pro	Glu	Leu	Thr	Ser	Thr	Tyr	Leu	
			100					105					110			
Thr	Leu	Ala	Asn	Leu	Cys	Phe	Met	Gln	Glu	Asp	Tyr	Gln	Glu	Met	Ala	
			115				120					125				
Asp	Ala	Ala	Gln	Lys	Ala	Ile	Ala	Leu	Glu	Glu	Gly	Asn	Ala	Met	Ala	
			130			135					140					
His	Tyr	Leu	Leu	Gly	Lys	Ala	Asn	His	Gly	Leu	Asp	Asn	Gly	Ile	Met	
145					150					155					160	
Thr	Ile	Ala	His	Leu	Thr	Lys	Ala	Ile	Val	Leu	Lys	Asp	Asp	Phe	Thr	
				165					170					175		
Glu	Ala	Arg	Leu	Leu	Arg	Ala	Glu	Ala	Leu	Tyr	Lys	Met	Gln	Gln	Phe	
			180				185						190			
Ala	Glu	Ala	Met	Glu	Asp	Ile	Glu	Ala	Ile	Leu	Thr	Gln	Asn	Pro	Asp	
			195				200					205				
Glu	Glu	Ala	Ala	Leu	Leu	Leu	Arg	Gly	Lys	Ile	Lys	Glu	Ala	Thr	Gly	
			210			215					220					
Lys	Glu	Glu	Glu	Ala	Glu	Thr	Asp	Tyr	Leu	His	Val	Thr	Glu	Ile	Asn	
225					230					235					240	
Pro	Phe	Asn	Glu	Gln	Ala	Tyr	Leu	Tyr	Leu	Gly	Gln	Leu	Phe	Ile	Thr	
				245					250					255		
Gln	Lys	Lys	Leu	Thr	Ala	Ala	Ile	Glu	Leu	Phe	Asp	Glu	Ala	Ile	Glu	
			260					265					270			
Leu	Asn	Pro	Asn	Phe	Gly	Ala	Ala	Tyr	His	Glu	Arg	Gly	Arg	Ala	Lys	
			275				280					285				
Leu	Leu	Asn	Gly	Asp	Lys	Asp	Gly	Ser	Ile	Glu	Asp	Met	Lys	Lys	Ser	
			290			295					300					
Leu	Glu	Leu	Asn	Pro	Lys	Glu	Gly	Glu	Asn	Leu	Asn	Gly	Gln	Phe	Asn	
305					310					315					320	
Asn	Gln	Gln	Ala	Glu	Thr	Thr	Pro	Asn	Val	Leu	Gly	Leu				
				325						330						

<210> 5376
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 5376

Tyr	Ile	Tyr	Ile	Ile	Val	Met	Ile	Phe	Tyr	Phe	Ser	Gly	Thr	Gly	Asn	
1				5					10					15		

Ser Lys Trp Ile Ala Glu Gln Ile Ala Lys Ala Gln Asn Glu Val Leu
 20 25 30
 Val Phe Met Pro Asn Ala Ile Arg Asp Gly Ile Glu Glu Phe Val Leu
 35 40 45
 Ala Asp Asp Glu Lys Val Gly Phe Val Phe Pro Val Tyr Ser Trp Gly
 50 55 60
 Pro Pro Leu Ser Val Leu Arg Phe Leu Asp Trp Ile Thr Leu Ser Asn
 65 70 75 80
 Tyr His Ser Gln Tyr Val Phe Phe Val Cys Ser Cys Gly Asp Asp Thr
 85 90 95
 Gly Leu Thr Glu Glu Leu Phe Arg Arg Ala Leu Ser Arg Lys Gly Met
 100 105 110
 Glu Cys Asn Ala Gly Phe Ser Val Ala Met Pro Asn Asn Tyr Val Leu
 115 120 125
 Leu Pro Gly Phe Asp Val Asp Lys Lys Glu Leu Glu Lys Lys Lys Leu
 130 135 140
 Asp Glu Ala Val Gly Arg Val Glu Glu Ile Asn Asp Ser Ile Thr Gly
 145 150 155 160
 Lys Lys Ile Gly Phe His Cys Asn Glu Gly Ser Phe Pro Trp Phe Lys
 165 170 175
 Thr Lys Val Leu Asn Pro Leu Phe Asn Arg Phe Met Thr Ser Ala Lys
 180 185 190
 Pro Phe Tyr Ala Thr Asp Asp Cys Ile Gly Cys Lys Arg Cys Glu Arg
 195 200 205
 Ile Cys Pro Val Gly Asn Val Val Met Ile Gly Trp Arg Pro Val Trp
 210 215 220
 Gly Met Asp Cys Thr Ser Cys Leu Ala Cys Tyr His Val Cys Pro Lys
 225 230 235 240
 His Ala Val Gln Tyr Gly Arg Arg Thr Lys Arg Lys Gly Gln Tyr Leu
 245 250 255
 Asn Pro Asn Val Ser Ile Ser His Glu Ala Ala Ala Gln
 260 265

<210> 5377

<211> 724

<212> PRT

<213> B.fragilis

<400> 5377

Tyr Met Ile Ile Lys Ser Val Thr Ile Asn Asn Phe Arg Ser Tyr Tyr
 1 5 10 15
 Arg Glu Asn Thr Phe Glu Phe Ser Lys Gly Leu Thr Leu Ile Ile Gly
 20 25 30
 Gly Asn Gly Asp Gly Lys Thr Thr Phe Phe Glu Ala Leu Glu Trp Leu
 35 40 45
 Leu Asp Thr Ala His Glu Thr Lys Asp Pro Ser Leu Ile Ser Glu Met
 50 55 60
 Arg Lys Ser Glu Leu Asp Glu Asp Glu Ala Asp Thr Met Ser Val Ser
 65 70 75 80
 Met Phe Phe Glu His Asn Gly Glu Lys Glu Val Ser Lys Ser Leu Thr
 85 90 95
 Phe Glu Lys Arg Asn Gly Val Cys Gln Val Thr Asn Phe Ala Phe Lys
 100 105 110
 Gly Tyr Glu Thr Asn Gly Ala Glu Arg Met Gln Arg Lys Gly Ser Ser
 115 120 125
 Leu Ile Asp Val Cys Phe Asp Ala Phe Ile Arg Lys Tyr Cys Leu Phe
 130 135 140
 Lys Gly Glu Ser Gln Leu Asn Val Phe Asn Glu Lys Glu Ala Leu Arg
 145 150 155 160

Thr	Leu	Val	Asp	Lys	Phe	Ser	Asp	Ile	Arg	Lys	Phe	Glu	Asp	Tyr	Val		
				165					170					175			
Ala	Val	Ala	Thr	Glu	Leu	Glu	Ala	Lys	Ser	Asp	Arg	Ala	Tyr	Ala	Lys		
			180					185					190				
Glu	Cys	Gln	Ser	Asp	Lys	Lys	Ile	Ser	Gln	Arg	Val	Ser	Glu	Leu	Gln		
		195					200					205					
Cys	Lys	Lys	Glu	His	Leu	Gly	Gln	Gln	Ile	Asp	Glu	Ile	Lys	Cys	Asp		
	210					215					220						
Ile	Arg	Lys	Gln	Glu	Asp	Val	Val	Ser	Thr	Tyr	Ser	Val	Lys	Leu	Glu		
225					230					235					240		
Asp	Leu	Glu	Lys	His	Gln	Val	Thr	Ser	Glu	Ser	Tyr	Gln	Asp	Ile	Lys		
				245					250					255			
Lys	Arg	Ile	Asp	Thr	Gln	Arg	Glu	Lys	Leu	Ala	Lys	Leu	Arg	Ser	Met		
			260					265						270			
Thr	Met	Val	Arg	Tyr	Asn	Thr	Asn	Leu	Leu	Asp	Glu	Phe	Trp	Ala	Leu		
		275					280						285				
Met	Pro	Tyr	Gln	Asn	Val	Phe	Glu	Glu	Phe	Gln	Lys	Lys	Val	Ser	Ala		
	290					295					300						
Leu	Ser	Lys	Glu	Lys	Arg	Arg	Leu	Ser	Asp	Leu	Asp	Ile	Gln	Glu	Lys		
305					310						315				320		
Ala	Ala	Ala	Lys	Ala	Lys	Lys	Glu	Val	Val	Asp	Glu	Leu	Thr	Ser	Ser		
				325						330					335		
Leu	Gln	Ser	Asp	Phe	Thr	Arg	Leu	Pro	Trp	Tyr	Leu	Pro	Asp	Gly	Glu		
			340					345					350				
Thr	Met	Gln	Glu	Met	Leu	Asp	Glu	Glu	Val	Cys	Lys	Val	Cys	Gly	Arg		
		355					360						365				
Pro	Ala	Lys	Lys	Gly	Thr	Pro	Glu	Tyr	Arg	Phe	Met	Glu	Asn	Lys	Leu		
	370					375					380						
Arg	Glu	Tyr	Leu	Glu	His	Lys	Ser	Gln	Glu	Leu	Ala	Ala	Lys	Gln	Glu		
385					390						395				400		
Glu	Leu	Pro	Asp	Thr	Pro	Leu	Phe	Gly	Thr	Gln	Tyr	Ile	Glu	Glu	Leu		
				405					410					415			
His	Ser	Leu	Ser	Ile	Ser	Phe	Gly	Gly	Met	Thr	Ala	Arg	Asp	Ile	Ser		
			420					425					430				
Lys	Lys	Tyr	Arg	Glu	Val	Val	Asp	Lys	Leu	Glu	Leu	Val	Ala	Arg	Ile		
		435					440					445					
Lys	Arg	Asp	Ile	Ala	Glu	Lys	Glu	Ala	Glu	Leu	Leu	Glu	Leu	Glu	Asp		
	450					455					460						
Glu	Lys	Ser	Arg	Leu	Leu	Ile	Gln	Ala	Asp	Gly	Leu	Thr	Glu	Ala	Met		
465					470					475					480		
Leu	Asp	Lys	Asn	Phe	Arg	Asp	Ile	Lys	Gly	Phe	Tyr	Glu	Gln	Arg	Asp		
				485					490					495			
Arg	Ala	Lys	Asn	Arg	Ile	Ser	Asp	Tyr	Arg	Glu	Arg	Leu	Val	Lys	Val		
			500					505					510				
Gln	Met	Glu	Tyr	Asp	Lys	Val	Lys	Glu	Glu	Phe	Glu	Gln	Leu	Asn	Pro		
		515					520						525				
Thr	Thr	Gly	Met	Ala	Lys	Val	Tyr	Asn	Arg	Val	His	Thr	Leu	Leu	Asp		
		530				535						540					
Lys	Val	Met	Arg	Ala	Phe	Val	Asn	Ala	Lys	Ser	Glu	Asn	Leu	Arg	Arg		
545					550					555					560		
Phe	Leu	Ala	Ser	Leu	Glu	Glu	Arg	Thr	Asn	Ser	Tyr	Phe	Glu	Lys	Leu		
				565					570					575			
Asn	Lys	Asn	Asp	Phe	Arg	Gly	Val	Ile	Arg	Ile	Val	Gln	Thr	Ala	Ser		
			580					585					590				
Asp	Ser	Ala	Glu	Ile	Lys	Leu	Phe	Ser	Ser	Asn	Gly	Thr	Pro	Ile	Lys		
		595					600					605					
Asn	Pro	Gly	Gly	Ala	Gln	Glu	Thr	Thr	Met	Tyr	Met	Ser	Leu	Leu	Phe		
	610					615					620						
Ala	Ile	Ser	Asp	Leu	Thr	Thr	Leu	Lys	Arg	Glu	Glu	Asp	Tyr	Pro	Leu		

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625          630          635          640
Ile Phe Asp Ala Pro Thr Ser Ser Phe Glu Asn Phe Lys Glu Asn Val
          645          650          655
Phe Tyr Asn Ile Ile Asp Lys Ile Gln Lys Gln Cys Ile Ile Val Thr
          660          665          670
Lys Asp Leu Leu Glu Val Asp Lys Leu Thr Gly Lys Lys Thr Leu Asn
          675          680          685
Glu Ala Gln Ile Glu Ala Leu Thr Cys Ser Val Tyr Arg Ile Glu Lys
          690          695          700
Gln Thr Gly Tyr Asn Glu Thr Asp Leu Ser Thr Ile Arg Thr Ile Ile
705          710          715          720
Thr Pro Ile Lys

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<210> 5378
 <211> 156
 <212> PRT
 <213> B.fragilis

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<400> 5378
Phe Cys Pro Ile Ile Thr Lys Val Lys Arg Lys Gln Met Glu Glu Ile
1          5          10          15
Glu Phe His His Ser Leu Pro Ile Gln Leu Arg Phe Asn Asp Val Asp
          20          25          30
Lys Phe Gly His Val Asn Asn Thr Val Tyr Phe Ser Phe Tyr Asp Leu
          35          40          45
Gly Lys Thr Glu Tyr Phe Ala Ser Val Cys Pro Gly Val Asp Trp Glu
          50          55          60
Lys Asp Gly Ile Val Val Val His Ile Glu Ala Asp Phe Leu Ala Gln
65          70          75          80
Ile Phe Ser Ser Asp His Ile Ala Val Gln Thr Ala Val Cys Glu Ile
          85          90          95
Gly Thr Lys Ser Phe His Leu Leu Gln Arg Val Ile Asp Thr Glu Thr
          100          105          110
Met Glu Val Lys Cys Ile Cys Arg Ser Val Met Val Thr Phe Asp Leu
          115          120          125
Glu Arg His Glu Ser Lys Pro Leu Thr Glu Glu Trp Ile Glu Ala Ile
          130          135          140
Cys Arg Phe Glu Gly Arg Asp Leu Arg Lys Lys Lys
145          150          155

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<210> 5379
 <211> 71
 <212> PRT
 <213> B.fragilis

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<400> 5379
Arg Lys Pro Ile Asn Asn Gln Ile Val Ile Asn Phe Tyr Phe Trp Leu
1          5          10          15
Leu Val Glu Lys Ala Ser Ile Met Gly His Val Leu Leu Arg Leu Pro
          20          25          30
Leu Leu Ile Arg Tyr Leu Ala Ser Thr Asp Ile Ser Arg Ser Ile Asn
          35          40          45
Asp Tyr Phe Ser Met Leu Cys Val Thr Phe His Asn Phe Lys Lys Leu
          50          55          60
Asn Ile Tyr Leu Val Cys Asn
65          70

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<210> 5380

<211> 174
 <212> PRT
 <213> B.fragilis

<400> 5380

Arg	Val	Gly	Met	Cys	Phe	Gly	Tyr	Ser	Leu	Asn	Gly	Leu	Cys	Ser	Phe
1				5					10					15	
Lys	Arg	Gly	Ile	Met	Lys	Leu	Ile	Thr	Glu	Gly	Leu	Leu	Asp	Lys	Val
			20					25					30		
Thr	Asp	Gln	Ala	Lys	Glu	Asn	Ser	Arg	Leu	Arg	Met	Asn	Tyr	Asn	Phe
		35					40					45			
His	Asp	Ser	Met	Asp	Ala	Pro	Ile	His	Arg	Met	Leu	Asn	Ala	Leu	Glu
	50					55					60				
Pro	Gly	Thr	Tyr	Leu	Pro	Pro	His	Arg	His	Lys	Asn	Pro	Asp	Lys	Glu
65					70					75					80
Glu	Val	Tyr	Leu	Val	Leu	Arg	Gly	Ser	Leu	Leu	Ala	Ile	Leu	Phe	Asp
			85					90						95	
Asp	Glu	Gly	Asn	Val	Thr	Glu	Lys	Val	His	Leu	Asn	Pro	Ala	Glu	Gly
			100					105					110		
His	Tyr	Gly	Ile	Glu	Ile	Pro	Pro	Cys	Val	Trp	His	Thr	Ile	Val	Val
	115					120						125			
Leu	Glu	Ser	Gly	Thr	Val	Ile	Tyr	Glu	Ile	Lys	Gln	Gly	Pro	Phe	Ala
	130					135					140				
Pro	Leu	Ile	Pro	Glu	Asn	Leu	Ala	Ser	Trp	Ala	Pro	Pro	Ala	Thr	Asp
145					150					155					160
Glu	Glu	Ala	Ala	Arg	Val	Phe	Met	Gln	Arg	Met	Leu	Glu	Leu		
				165				170							

<210> 5381
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 5381

Ser	Arg	Leu	Val	Asn	Phe	Gln	Tyr	Leu	His	Arg	Tyr	Pro	Phe	Ile	Arg
1				5					10					15	
Leu	Leu	Phe	Pro	Leu	Ile	Ala	Gly	Phe	Leu	Val	Gly	Asn	Gly	Leu	Phe
			20					25					30		
Phe	Arg	Gly	Val	Cys	Val	Ser	Lys	Gly	Val	Leu	Ala	Gly	Gly	Leu	Ala
		35					40					45			
Gly	Leu	Phe	Leu	Leu	Leu	Leu	Val	Val	Tyr	Phe	Ser	His	Arg	Tyr	Ser
	50					55					60				
Leu	Arg	Trp	Met	Phe	Gly	Cys	Ile	Leu	Tyr	Leu	Phe	Val	Phe	Phe	Gly
65					70				75						80
Gly	Ala	Gly	Gly	Ile	Asn	Gln	Ala	Leu	Gln	Gln	Thr	Leu	Tyr	Ser	Phe
			85					90					95		
Ser	Glu	Gln	Lys	Cys	Val	Tyr	Arg	Ala	Val	Val	Leu	Glu	Gln	Pro	Glu
			100					105					110		
Pro	Lys	Glu	His	Ser	Phe	Leu	Cys	Arg	Ala	Phe	Leu	Glu	Glu	Arg	Gln
	115					120						125			
Asp	Ser	Val	Cys	Thr	Met	Pro	Val	Asn	Arg	Lys	Val	Leu	Leu	Tyr	Ile
	130					135					140				
Ser	Lys	Asp	Ser	Leu	Ser	Glu	Gly	Leu	Arg	Ser	Gly	Asp	Glu	Leu	Ile
145					150					155					160
Phe	Phe	Ala	His	Val	Ser	Pro	Pro	Ser	Asn	Asn	Gly	Asn	Pro	Asp	Glu
				165				170					175		
Phe	Asp	Tyr	Ala	Arg	Tyr	Leu	Arg	Tyr	Lys	Gly	Ile	Ser	Gly	Ile	Ala
			180					185					190		
Phe	Val	Ala	Ser	Gly	Asn	Trp	Lys	Ile	Thr	Gly	Tyr	Arg	Phe	Ser	Arg

195	200	205
Ser Cys Arg Gln Ile Ala Leu Glu Tyr Arg Asp Arg Ile Leu Asp Gln		
210	215	220
Tyr Arg Ala Leu Lys Phe Asn Pro Asp Glu Phe Ala Val Leu Ala Ala		
225	230	235
Leu Thr Val Gly Tyr Lys Glu Glu Leu Ser Glu Asp Ile Arg Glu Thr		
245	250	255
Tyr Ser Val Ser Gly Ala Ser His Val Leu Ala Leu Ser Gly Leu His		
260	265	270
Ile Gly Phe Leu Tyr Met Met Leu Leu Phe Phe Leu Lys Trp Leu Pro		
275	280	285
Gly Asn Ala Phe Gly Val Arg Leu Phe Arg Ala Val Val Ile Ile Thr		
290	295	300
Ala Leu Trp Gly Phe Ala Phe Phe Thr Gly Leu Ser Pro Ser Val Val		
305	310	315
Arg Ser Val Val Phe		320
325		

<210> 5382

<211> 83

<212> PRT

<213> B.fragilis

<400> 5382

Leu Ile Ile Val Leu Thr Met Ala His Tyr Asn Asn Asn Ser Asn Arg		
1	5	10
Ile Leu Gln Ala Val Leu Ala Asp Glu Lys Leu Ile Glu Phe Gly Glu		
20	25	30
Tyr Asn Pro Ala Asp Tyr Gln Ser Leu Asp Glu Ala Leu Val Ser Asp		
35	40	45
Asn Leu Val Val Asn Thr Val Ala Arg Ile Ile Asn Glu Val Asn Glu		
50	55	60
Glu Ser Ser Ser Arg Glu Ile Tyr Asn Met Val Thr Thr Tyr Leu Lys		
65	70	75
Asn Asn Ile		80

<210> 5383

<211> 204

<212> PRT

<213> B.fragilis

<400> 5383

Lys Met Asn Val Asn Ile Thr Ala Val Leu Leu Lys Ser Leu Phe Asp		
1	5	10
His Ile Val Ala Phe Leu Gly Leu Leu Phe Leu Ser Pro Ile Leu Leu		
20	25	30
Val Thr Ala Ile Leu Ile Arg Val Lys Met Pro Gly Gly Pro Val Ile		
35	40	45
Phe Lys Gln Lys Arg Val Gly Arg Tyr Gly Arg Leu Phe Thr Met Tyr		
50	55	60
Lys Phe Arg Ser Met Thr Val Gly His Ser Gly Gly Ser Val Ser Val		
65	70	75
Lys Gly Glu Ser Arg Ile Thr Pro Leu Gly Ala Lys Leu Arg Lys Tyr		
85	90	95
Lys Ile Asp Glu Leu Pro Glu Leu Trp Asn Val Leu Ile Gly Asp Met		
100	105	110
Ser Leu Val Gly Pro Arg Pro Asp Val Pro Gly Tyr Ala Asp Asn Leu		
115	120	125

Leu Gly Asp Asp Arg Arg Met Leu Leu Leu Lys Pro Gly Ile Thr Gly
 130 135 140
 Pro Ala Ser Leu Lys Tyr Arg Asn Glu Glu Glu Leu Leu Ala Gly Gln
 145 150 155 160
 Asp Asn Pro Gln Lys Tyr Asn Asp Glu Val Leu Phe Pro Asp Lys Val
 165 170 175
 Arg Ile Asn Ile Glu Tyr Leu Asp Asn Trp Ser Phe Trp Asn Asp Ile
 180 185 190
 Lys Ile Ile Val Tyr Thr Val Phe Gly Lys Asp Met
 195 200

<210> 5384

<211> 308

<212> PRT

<213> B.fragilis

<400> 5384

Glu Pro Ile Val Glu Arg Trp Gln Gly Ala His Tyr Gly Thr Tyr Asn
 1 5 10 15
 Asp Gln Gln Asp His Arg Leu Leu Gln Leu Gln Ala Glu Val Ser Leu
 20 25 30
 Ala Leu Trp Asp Ala Lys Ala Lys Arg Ala Lys Gly Lys Ser Asp Glu
 35 40 45
 Ala Arg Arg Leu Asn Gln Glu Leu Asp Asn Val Lys Ala Gln Ile Thr
 50 55 60
 Arg His Tyr Gln Tyr Val Cys Asp His Asp Ser Leu Val Thr Ala Lys
 65 70 75 80
 Ser Val Tyr Asn Arg Tyr Leu Gly Phe Gly Asp Asp Tyr His Thr Leu
 85 90 95
 Met Gly Leu Phe Arg Glu Gln Leu Ala Ser Tyr Lys Glu Lys Ile Gly
 100 105 110
 Lys Glu Lys Ala Ala Ser Thr Tyr Arg Gly Leu Val Ala Asp Tyr Lys
 115 120 125
 Asn Leu Gln Leu Phe Leu Lys Glu Lys Arg Arg Ile Glu Asp Ile Ala
 130 135 140
 Ile Ala Glu Leu Asp Lys Lys Phe Ile Glu Asp Tyr Tyr Asn Trp Met
 145 150 155 160
 Leu Gly Thr Cys Ala Leu Ala Ser Ser Thr Ala Phe Gly Arg Gly Asn
 165 170 175
 Thr Leu Lys Trp Leu Met Tyr Thr Ala Gln Glu Arg Gly Trp Ile Arg
 180 185 190
 Leu His Pro Phe Ile Gly Phe Asp Cys Leu Ser Glu Tyr Lys Trp Arg
 195 200 205
 Ser Phe Leu Thr Glu Glu Asp Leu Gln Ser Val Ile His Val Lys Leu
 210 215 220
 Asn Tyr Lys Arg Gln Arg Ala Ile Arg Asp Met Phe Leu Phe Met Cys
 225 230 235 240
 Phe Thr Gly Leu Ala Tyr Ala Asp Leu Lys Glu Ile Thr Tyr Lys Asn
 245 250 255
 Ile His Thr Asp Ser Glu Gly Gly Thr Trp Leu Ile Gly Asn Arg Ile
 260 265 270
 Lys Thr Asp Val Ala Tyr Val Val Lys Leu Leu Pro Ile Thr Ile Glu
 275 280 285
 Leu Val Glu Arg Tyr Arg Gly Thr Met Lys Arg Lys Val Arg Leu Thr
 290 295 300
 Arg Cys Phe Pro
 305

<210> 5385

<211> 82
 <212> PRT
 <213> B.fragilis

<400> 5385

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Asn Ile Leu Leu Ile Lys Arg Asp Ser Lys Asp Leu Leu Asn Lys Ile
1           5           10           15
His Ser Leu Leu Leu Leu Ile Lys Asn Asn Arg Glu Thr Ser Phe His
          20           25           30
Leu Ile Asn Pro Lys Leu Ile Asn Lys Leu Thr Ile Phe Val Asp Ile
          35           40           45
Thr Lys Ile Ile Asn Leu Tyr Glu Thr Thr Ser Phe Lys Arg Asn Arg
          50           55           60
Thr Arg Tyr Gln Lys Arg Ser Ser Gln Lys Glu Asn Tyr Tyr Thr Leu
65           70           75           80
Tyr Ile

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<210> 5386
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 5386

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Ile Met Gln Leu Leu Lys Lys Arg Ile Leu Gln Asp Gly Lys Cys Tyr
1           5           10           15
Glu Gly Gly Ile Leu Lys Val Asp Ser Phe Ile Asn His Gln Met Asp
          20           25           30
Pro Val Leu Met Lys Ser Ile Gly Val Glu Phe Val Arg Leu Phe Ala
          35           40           45
Gly Thr Asn Val Asn Lys Ile Met Thr Ile Glu Ala Ser Gly Ile Ala
          50           55           60
Pro Ala Ile Met Thr Gly Tyr Leu Met Asp Leu Pro Val Val Phe Ala
65           70           75           80
Lys Lys Lys Ser Pro Arg Thr Ile Gln Asn Ala Leu Ser Thr Thr Val
          85           90           95
His Ser Phe Thr Lys Asp Arg Asp Tyr Glu Val Val Ile Ser Ser Asp
          100          105          110
Phe Leu Thr Pro Lys Asp Asn Val Leu Phe Val Asp Asp Phe Leu Ala
          115          120          125
Tyr Gly Asn Ala Ala Leu Gly Val Ile Asp Leu Ile Lys Gln Ser Gly
          130          135          140
Ala Asn Leu Val Gly Met Gly Phe Ile Ile Glu Lys Ala Phe Gln Asn
145          150          155          160
Gly Arg Lys Thr Leu Glu Glu Arg Gly Val Arg Val Glu Ser Leu Ala
          165          170          175
Ile Ile Glu Asp Leu Ser Asn Cys Arg Ile Thr Ile Lys Asp
          180          185          190

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<210> 5387
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 5387

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Asp Ile Phe Ser Asn Ser Leu Ser Thr Gln Ala Val Phe Gln Gly Glu
1           5           10           15
Asp Glu Ala Gly Phe Ala Ser Ala Val Arg Ala Asp Glu Ala Lys Arg
          20           25           30

```

Met Asn Ala Thr Gly Lys Val Ile Asp Asn Phe Ala Asp Gly Leu Ala
 35 40 45
 Ser Ile Gly Ser Asp Asp Ile Val Gly Tyr Leu Ala Lys Val Thr Leu
 50 55 60
 Tyr Val Asp
 65

<210> 5388

<211> 123

<212> PRT

<213> B.fragilis

<400> 5388

Tyr Phe Ala Ser Phe Tyr Phe Phe Arg Asp Lys Ile Tyr Phe Ile Phe
 1 5 10 15
 Phe Leu Arg Thr Tyr Glu Gly Ile Pro Lys Arg Ala Ile Glu Pro Glu
 20 25 30
 Phe Ser Ser Phe Arg Asn Ser Tyr Lys Ser Glu Glu His Asn Lys Phe
 35 40 45
 Gln Glu Leu Val Lys Lys Tyr Gly Phe Tyr Pro Glu Leu Cys Asp Thr
 50 55 60
 Cys Arg Lys Gly Asn Leu Lys Ile Lys Ser Lys Arg Arg Phe Tyr
 65 70 75 80
 Lys Ser Leu Cys Gly Gly Met Thr Arg Asp Leu Leu Ile Lys Pro Phe
 85 90 95
 Phe Val Tyr Lys Gly Leu Ser Phe Asn Ser Ile Cys Val Thr Glu Pro
 100 105 110
 Gly Arg Thr Val Arg Pro Ala Asp His Ile Ser
 115 120

<210> 5389

<211> 335

<212> PRT

<213> B.fragilis

<400> 5389

Ile Asn Lys Ser Ile Met Val Lys Ile Ile Leu Gly Val Leu Ser Leu
 1 5 10 15
 Leu Val Met Leu Ser Cys Ser Thr Ala Val Lys Glu Asn Thr Thr Gln
 20 25 30
 Pro Asp Ile Met Glu Thr Asn Lys Lys Asn Leu Gly Asn Leu Leu Ala
 35 40 45
 Leu Tyr Pro Lys Pro Met Thr Val Val Gly Ala Glu Val Glu Gly Lys
 50 55 60
 Val Asn Trp Leu Val Val Gly His Thr Gly Val Ile Gly His Asp Arg
 65 70 75 80
 Ile Leu Val Ser Met Ser Lys Ser His Tyr Thr Asn Gln Gly Val Lys
 85 90 95
 Lys Ser Lys Arg Leu Ser Val Asn Leu Val Ser Arg Glu Met Leu Pro
 100 105 110
 Lys Ala Asp Tyr Val Gly Ser Val Ser Gly Ala Thr Val Asp Lys Ser
 115 120 125
 Glu Val Phe Ala Tyr His Ile Gly Glu Asn Asp Thr Pro Val Ile Asp
 130 135 140
 Ala Ser Pro Leu Thr Met Glu Cys Glu Val Val Asp Ile Tyr Glu Thr
 145 150 155 160
 Asp Gly Phe Asp Asn Phe Ile Cys Ala Ile Val Asn Thr Tyr Ala Ala
 165 170 175
 Ser Asp Val Leu Asp Ser Asp Gly Lys Leu Asp Tyr Thr Lys Leu Lys

Pro	Val	Leu	180	Phe	Glu	Phe	Pro	Thr	185	Tyr	Ser	Tyr	Leu	190	Ala	Thr	Gly	Glu
		195						200						205				
Ile	Ile	Gly	Lys	Cys	Leu	Asn	Pro	Asp	Lys	Pro	Gly	Met	Cys	Val	Lys			
	210					215					220							
Glu	Pro	Met	Thr	Thr	Asp	Gly	Ile	Val	Arg	Leu	Ser	Lys	Ile	Glu	Val			
225					230					235					240			
Tyr	Pro	Gln	Tyr	Leu	Asp	Glu	Tyr	Met	Asn	Tyr	Ala	Thr	Glu	Val	Gly			
				245					250					255				
Glu	Ile	Ser	Leu	Arg	Thr	Glu	Pro	Gly	Val	Leu	Thr	Met	Tyr	Ala	Val			
			260					265					270					
Gly	Glu	Lys	Glu	Asn	Pro	Cys	Lys	Val	Thr	Ile	Leu	Glu	Thr	Tyr	Ala			
		275					280					285						
Ser	Arg	Glu	Ala	Tyr	Glu	Gln	His	Ile	Ala	Ser	Glu	His	Phe	Gln	Lys			
	290					295					300							
Tyr	Lys	Gln	Gly	Thr	Leu	His	Met	Val	Lys	Ser	Leu	Val	Leu	Ser	Asp			
305					310					315					320			
Gln	Thr	Pro	Leu	Asn	Pro	Ala	Asn	Lys	Leu	Asn	Asn	Phe	Met	Gln				
				325					330					335				

<210> 5390

<211> 415

<212> PRT

<213> B.fragilis

<400> 5390

Lys	Lys	Glu	Ser	Met	Asn	Lys	Glu	Ile	Asp	Ile	Lys	Asp	Met	Ala	Pro			
1				5					10					15				
Val	Lys	Ala	Ser	Glu	Arg	His	Val	Ile	Leu	Asp	Ala	Leu	Arg	Gly	Phe			
		20						25					30					
Ala	Leu	Leu	Val	Ile	Cys	Phe	Ala	Asn	Phe	Pro	Glu	Phe	Ser	Leu	Tyr			
		35					40					45						
Thr	Phe	Gln	Lys	Pro	Glu	Ile	Thr	Glu	Ala	Met	Pro	Thr	Ala	Glu	Ile			
	50					55					60							
Asp	Lys	Val	Ile	Arg	Phe	Pro	Gln	Tyr	Leu	Phe	Val	Asp	Gly	Lys	Phe			
65				70					75						80			
Tyr	Thr	Ile	Phe	Ser	Leu	Leu	Phe	Gly	Ile	Gly	Phe	Ser	Ile	Ile	Ile			
			85					90						95				
Ser	Asn	Ala	Ala	Lys	Lys	Gly	Thr	Asp	Gly	Phe	Arg	Ile	Phe	Tyr	Arg			
		100						105					110					
Arg	Met	Ile	Val	Leu	Ala	Ala	Ile	Gly	Phe	Leu	His	Leu	Met	Phe	Ile			
		115					120					125						
Trp	Ser	Gly	Asp	Ile	Leu	Leu	Leu	Tyr	Ala	Leu	Leu	Gly	Met	Leu	Leu			
	130				135						140							
Pro	Leu	Phe	Arg	His	Val	Ser	Asp	Arg	Val	Leu	Leu	Gly	Thr	Ser	Ala			
145				150						155					160			
Val	Leu	Leu	Leu	Leu	Pro	Ile	Leu	Ile	Asp	Trp	Leu	Ala	Gly	Thr	Phe			
			165					170						175				
Gly	Val	Ser	Arg	Ser	Ser	Pro	Ala	Val	Arg	Met	Gln	Gln	His	Tyr	Cys			
		180					185				190							
Asn	Leu	Tyr	Gly	Ile	Thr	Glu	Tyr	Asn	Phe	Gly	Ile	Trp	Leu	Arg	Asp			
	195					200					205							
Ala	Glu	Asn	Tyr	Gly	Gly	Val	Phe	Gln	Phe	Leu	Val	Gln	Gly	Ala	Trp			
	210				215						220							
Val	Arg	Leu	Gln	Glu	Phe	Ile	Asp	Gly	Asn	Arg	Tyr	Phe	Lys	Val	Leu			
225				230					235						240			
Gly	Leu	Phe	Leu	Leu	Gly	Phe	Tyr	Ile	Gly	Arg	Lys	Gln	Ile	Tyr	Ala			
			245					250					255					
Asp	Leu	Glu	Ala	Asn	Arg	Val	Leu	Leu	Lys	Lys	Thr	Val	Thr	Tyr	Gly			

260	265	270
Phe Leu Leu Gly Leu Pro Leu Ser Val Leu Tyr Ala Trp Ser Ala Val		
275	280	285
Asn Gly His Pro Phe Gly Thr Ala Ala His Thr Ala Ile Tyr Thr Ala		
290	295	300
Ser Val Tyr Pro Leu Gly Phe Ala Tyr Val Ser Ala Ile Cys Leu Leu		
305	310	315
Tyr Leu His Gly Arg Glu Trp Arg Leu Trp Arg Cys Leu Ala Ala Pro		
325	330	335
Gly Arg Met Ala Leu Thr Asn Tyr Val Gly Gln Ser Val Trp Gly Met		
340	345	350
Val Leu Phe Tyr Gly Ile Gly Phe Gly Leu Gly Ala Gly Ile Gly Leu		
355	360	365
Thr Gly Thr Glu Ser Ile Ala Phe Tyr Val Phe Leu Val Gln Met Ala		
370	375	380
Phe Ser Ala Leu Trp Leu Ser Tyr Phe Arg Phe Gly Pro Leu Glu Trp		
385	390	395
Gly Trp Arg Met Leu Thr Tyr Gly Lys Trp Leu Lys Ile Arg Lys		
405	410	415

<210> 5391
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 5391
Ala Val Cys Pro Leu Leu Glu Val Leu Pro His Asn Leu Ser Val Trp
1 5 10 15
Phe Leu Ser Gly Asn Thr Phe Val Gly Tyr Ala Asp Gln His Pro Leu
20 25 30
Val Ser Val Ile Asp Tyr Asp Thr Val Thr Pro Ile Leu His Thr His
35 40 45
Ser Gln Phe Ser Val Tyr Ala Leu Tyr Lys Gly Met Gly Val Thr Leu
50 55 60
Leu Ser Gly Leu Val Ala Trp Asn Ser Val Gly
65 70 75

<210> 5392
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 5392
Ile Thr Ile Pro Ser Arg Pro Ser Cys Ile Arg Thr Ala Asn Phe Gln
1 5 10 15
Ser Met His Phe Ile Lys Gly Trp Ala Leu Leu Phe Ser Pro Asp Leu
20 25 30
Leu His Gly Thr Pro Leu Gly Asn His Ile Lys Asp Phe Ser Phe Phe
35 40 45
Ser Tyr Gln Ser Asn Glu Ala Gly Glu His Ile Arg Cys His Ile Ile
50 55 60
Asp Met Ala Lys Ser Lys Leu Ile Asn Gly Glu Gln Ile Met
65 70 75

<210> 5393
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 5393

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Ile Leu Lys Pro Thr Arg Asn Met Glu Ile Thr Asn Ala Glu Phe Val
1      5      10      15
Ile Ser Asn Thr Asp Val Lys Lys Cys Pro Ala Gly Thr Phe Pro Glu
20      25      30
Tyr Ala Phe Ile Gly Arg Ser Asn Val Gly Lys Ser Ser Leu Ile Asn
35      40      45
Met Leu Thr Gly Arg Lys Gly Leu Ala Met Thr Ser Ala Thr Pro Gly
50      55      60
Lys Thr Met Leu Ile Asn His Phe Leu Ile Asn Asn Ser Trp Tyr Leu
65      70      75      80
Val Asp Leu Pro Gly Tyr Gly Tyr Ala Arg Arg Gly Gln Lys Gly Gln
85      90      95
Glu Gln Ile Arg Thr Ile Ile Glu Asp Tyr Ile Leu Glu Arg Glu Gln
100     105     110
Met Thr Asn Leu Phe Val Leu Ile Asp Ser Arg Leu Glu Pro Gln Lys
115     120     125
Ile Asp Leu Glu Phe Met Glu Trp Leu Gly Glu Asn Gly Ile Pro Phe
130     135     140
Ala Ile Ile Phe Thr Lys Ala Asp Lys Leu Lys Gly Gly Arg Leu Lys
145     150     155     160
Ile Asn Ile Ser Ala Tyr Leu Arg Glu Leu Arg Lys Gln Trp Glu Glu
165     170     175
Leu Pro Pro Tyr Phe Ile Thr Ser Ser Glu Glu Arg Leu Gly Arg Thr
180     185     190
Glu Val Leu Asn Tyr Ile Lys Ser Ile Asn Lys Glu Leu Asn Ser Lys
195     200     205

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<210> 5394

<211> 175

<212> PRT

<213> B.fragilis

<400> 5394

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Lys Asn Lys Thr Met Gln Asn Ile Ile Ile Thr Phe Ile Ala Phe Phe
1      5      10      15
Val Leu Arg Leu Leu Ser Leu Ser Tyr Ser Ile Arg Asn Glu Lys Arg
20      25      30
Leu Leu Lys Ser Gly Ala Val Gln Tyr Gly Lys Val Asn Ser Leu Leu
35      40      45
Leu Thr Leu Ala His Ile Val Tyr Tyr Phe Ser Ala Leu Tyr Glu Ala
50      55      60
Tyr Thr Ser Gly Thr Thr Phe Asn Tyr Phe Ser Val Cys Gly Val Phe
65      70      75      80
Ile Met Gly Phe Ala Tyr Ala Met Leu Phe Tyr Val Ile Tyr Lys Leu
85      90      95
His Asp Val Trp Thr Val Lys Leu Tyr Ile Ile Pro Asp His Arg Ile
100     105     110
Glu Lys Ser Phe Leu Phe Arg Thr Val Arg His Pro Asn Tyr Tyr Leu
115     120     125
Asn Ile Ile Pro Glu Leu Ile Gly Ile Ala Leu Leu Cys Asn Ala Trp
130     135     140
Tyr Thr Leu Leu Ile Gly Leu Pro Ile Tyr Ala Cys Leu Leu Ala Ile
145     150     155     160
Arg Ile Arg Gln Glu Glu Arg Ala Met Lys Glu Leu Leu Glu Asn
165     170     175

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<210> 5395

<211> 495

<212> PRT

<213> B.fragilis

<400> 5395

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Asn Ser Gly Thr Arg Lys Leu Val Ser Gln Thr Asn Ala Leu Val His
1      5      10      15
Asn Leu Met Gly Thr Gly Lys Gly Lys Thr Asp Tyr Leu Leu Ser Leu
20      25      30
Ile Arg Glu Gly Lys Gln Met Thr Leu Gly Gln Gln Leu Arg Leu Thr
35      40      45
Ala Tyr Leu Ser Val Pro Ala Ile Met Ala Gln Ile Ser Ser Ile Ala
50      55      60
Met Gln Tyr Ile Asp Ala Ser Met Val Gly Ser Leu Gly Ala Asn Ala
65      70      75      80
Ala Ala Ser Ile Gly Leu Val Ser Thr Thr Thr Trp Leu Phe Trp Glu
85      90      95
Leu Cys Ala Ala Ala Ala Thr Gly Phe Ser Val Gln Val Ala His Lys
100     105     110
Ile Gly Ala Gly Asp Phe Val Gly Ala Arg Lys Ile Leu Arg Gln Ser
115     120     125
Ile Ala Ala Thr Leu Val Phe Ser Ser Leu Leu Ala Ala Val Gly Ile
130     135     140
Ser Ile Ser Gly Met Leu Pro Gly Trp Leu Gly Gly Asp Glu Val Ile
145     150     155     160
Arg Ser Asp Ser Ser Leu Tyr Phe Trp Ile Phe Ala Leu Phe Leu Pro
165     170     175
Ala Leu Gln Leu Asn Phe Leu Ala Gly Gly Met Leu Arg Cys Ser Gly
180     185     190
Asn Met Arg Val Pro Ser Met Leu Asn Val Leu Met Cys Leu Leu Asp
195     200     205
Ile Val Phe Asn Phe Phe Leu Ile Phe Pro Ser Arg Gln Val Glu Trp
210     215     220
Phe Gly Val Thr Phe Thr Thr Pro Gly Ala Gly Leu Gly Val Glu Gly
225     230     235     240
Ala Ile Leu Gly Thr Val Leu Ala Glu Leu Ile Thr Ala Gly Gly Met
245     250     255
Met Trp Tyr Leu Cys Arg Arg Ser Pro Met Leu Arg Leu Ser Gly Glu
260     265     270
Arg Gly Ser Phe Leu Pro Arg Lys Glu Thr Leu Ser Lys Ala Phe Arg
275     280     285
Ile Ser Leu Pro Met Gly Phe Glu His Met Ala Ile Cys Gly Ala Gln
290     295     300
Ile Ala Thr Thr Val Ile Val Ala Pro Leu Gly Ile Ile Ala Ile Ala
305     310     315     320
Ala Asn Ser Phe Ala Ile Thr Ala Glu Ser Leu Cys Tyr Met Pro Gly
325     330     335
Tyr Gly Ile Ser Glu Ala Ala Thr Thr Leu Val Gly Gln Ser Leu Gly
340     345     350
Ala Asn Arg Ile Arg Leu Leu Arg Arg Phe Ala Asn Ile Thr Val Trp
355     360     365
Ser Gly Met Leu Ile Met Gly Val Met Gly Thr Leu Met Tyr Met Ala
370     375     380
Ala Pro Gln Ile Ile Gly Val Met Thr Pro Val Glu Glu Ile Arg Thr
385     390     395     400
Leu Gly Ile Glu Ile Leu Arg Ile Glu Ala Phe Ala Glu Pro Met Phe
405     410     415
Ala Ala Ser Ile Val Ala Tyr Gly Ile Phe Val Gly Val Gly Asn Thr
420     425     430
Phe Val Pro Ser Leu Met Asn Phe Gly Ser Ile Trp Gly Val Arg Leu

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435	440	445
Thr Leu Ala Ala Trp Leu Ala Pro Thr Met Gly Leu Arg Gly Val Trp		
450	455	460
Phe Ala Met Cys Ile Glu Leu Cys Phe Arg Gly Val Ile Phe Leu Ala		
465	470	475
Arg Leu Trp Gly Ser Asn Trp Ile Tyr Lys Leu Arg Ile Asn Arg		
485	490	495

<210> 5396

<211> 360

<212> PRT

<213> B.fragilis

<400> 5396

Asn Asn Thr Ala Met Lys Leu Gln Ala Ile Ala Ile Leu Thr Phe Leu		
1	5	10
Thr Phe Ala Asn Val Met Ala Gln Glu Thr Thr Thr Thr Lys Tyr Ile		
20	25	30
Asn Ser Thr Asp Met Glu Ala Leu Lys Leu Thr Gln Glu Trp Asp Lys		
35	40	45
Thr Phe Pro Gln Ser Asp Lys Val Glu His Thr Lys Ile Thr Phe His		
50	55	60
Asn Arg Tyr Gly Ile Thr Leu Ala Ala Asp Leu Tyr Lys Pro Lys Asn		
65	70	75
Thr Gln Gly Arg Leu Ala Ala Ile Ala Val Ser Gly Pro Tyr Gly Ala		
85	90	95
Val Lys Glu Gln Val Ser Gly Arg Tyr Ala Gln Thr Leu Ala Glu Arg		
100	105	110
Gly Phe Leu Thr Ile Ala Phe Asp Pro Ser Tyr Tyr Gly Glu Ser Gly		
115	120	125
Gly Thr Pro Arg Tyr Leu Thr Ser Pro Glu Ile Ser Thr Glu Asp Phe		
130	135	140
Ser Ala Ala Val Asp Tyr Leu Thr Ser Arg Ala Asp Val Asp Pro Glu		
145	150	155
Arg Ile Gly Ile Leu Gly Ile Cys Gly Trp Gly Gly Phe Ala Leu Asn		
165	170	175
Ala Ala Ala Asn Asp Pro Arg Ile Lys Ala Thr Val Thr Ser Thr Met		
180	185	190
Tyr Asp Met Ser Arg Val Asn Ala Asn Gly Tyr Phe Asp Ala Met Ser		
195	200	205
Ser Asp Asp Arg Tyr Lys Leu Arg Glu Gln Leu Asn Ala Gln Arg Thr		
210	215	220
Glu Asp Tyr Arg Asp Asp Ser Tyr Val Arg Asp Gly Gly Val Leu Asp		
225	230	235
Pro Val Thr Asp Asp Thr Pro Gln Phe Val Lys Glu Tyr His Asp Tyr		
245	250	255
Tyr Lys Thr Glu Arg Gly Tyr His Arg Arg Ser Pro Asn Ser Asn Glu		
260	265	270
Gly Ile Thr Lys Thr Ser Val Leu Ala Phe Ile Asn Met Pro Leu Leu		
275	280	285
Thr Tyr Ile Ser Glu Ile Arg Ser Ala Val Leu Met Ile His Gly Glu		
290	295	300
Lys Ala His Ser Arg Tyr Phe Ser Glu Asp Ala Tyr Lys Arg Leu Thr		
305	310	315
Gly Ser Asn Lys Glu Leu Leu Ile Ile Pro Gly Ala Asn His Val Asp		
325	330	335
Leu Tyr Asp Asn Leu Asn Val Ile Pro Phe Asp Lys Ile Asp Ala Phe		
340	345	350
Phe Lys Asn Ala Leu Lys Glu Lys		

360

<400> 5397

<210> 5398

<400> 5398

Val	Met	Arg	Tyr	Asp	Phe	Asp	Thr	Ile	Val	Pro	Arg	Arg	Gly	Thr	Asn
1				5					10					15	
Ser	Tyr	Lys	Trp	Asp	Thr	Pro	Glu	Glu	Lys	Asn	Val	Leu	Pro	Met	Trp
			20				25						30		
Val	Ala	Asp	Met	Asp	Phe	Arg	Thr	Ala	Pro	Ala	Ile	Val	Glu	Ala	Leu
			35				40					45			
Gln	Arg	Arg	Val	Ala	His	Gly	Ile	Phe	Gly	Tyr	Thr	Lys	Val	Pro	Glu
	50					55					60				
Thr	Tyr	Tyr	Asp	Ala	Val	Val	Arg	Trp	Phe	Glu	Ser	Arg	His	Arg	Trp
65					70					75					80
Gln	Ile	Asp	Pro	Arg	Trp	Ile	Ile	Tyr	Thr	Ser	Gly	Val	Val	Pro	Ala
				85					90					95	
Leu	Ser	Ala	Ile	Ile	Lys	Ala	Leu	Thr	Ala	Pro	Gly	Asp	Lys	Val	Ile
			100					105					110		
Val	Gln	Thr	Pro	Ala	Tyr	Asn	Cys	Phe	Tyr	Ser	Ser	Ile	Arg	Asn	Asp
		115					120					125			

Gly Cys Glu Leu Ser Ala Asn Asn Leu Ile Tyr Arg Asp Gly Arg Tyr
 130 135 140
 Met Ile Asp Phe Asp Asp Leu Ala Ala Lys Ala Ala Asp Pro Lys Ala
 145 150 155 160
 Lys Ile Leu Leu Leu Cys Asn Pro His Asn Pro Val Gly Arg Val Trp
 165 170 175
 Thr Pro Glu Glu Leu Arg His Ile Gly Asp Ile Cys Leu Arg Asn Gly
 180 185 190
 Val Phe Val Val Ala Asp Glu Ile His Cys Glu Leu Thr Tyr Glu Gly
 195 200 205
 His Asp Tyr Thr Pro Phe Ala Ser Leu Ser Glu Arg Phe Gln Gln Asn
 210 215 220
 Ser Val Thr Cys Ile Ser Pro Ser Lys Ala Phe Asn Leu Ala Gly Leu
 225 230 235 240
 Gln Ile Ala Asn Ile Ile Ala Leu Asp Glu Glu Val Arg Arg Arg Ile
 245 250 255
 Asp Arg Ala Ile Asn Ile Asn Glu Val Cys Asp Val Asn Pro Phe Gly
 260 265 270
 Val Ile Ala Thr Ile Ala Ala Tyr Asn Glu Gly Gly Glu Trp Leu Asp
 275 280 285
 Ala Leu Arg Lys Tyr Leu Arg Gly Asn Tyr Glu Tyr Leu Cys His Phe
 290 295 300
 Phe Ala Glu Arg Leu Pro Gln Tyr Pro Val Leu Pro Leu Glu Gly Thr
 305 310 315 320
 Tyr Leu Val Trp Ile Asp Cys Arg Ala Leu Gly Ile Gly Ser Asp Ala
 325 330 335
 Thr Thr Leu His Leu Gln Glu Gln Gln Lys Leu Met Val Asn Ser Gly
 340 345 350
 Thr Met Tyr Gly Pro Ser Gly Glu Gly Phe Ile Arg Leu Asn Ile Ala
 355 360 365
 Cys Pro Arg Thr Leu Leu Ala Asp Gly Leu Glu Arg Met Ala Arg Val
 370 375 380
 Leu Glu Cys Cys
 385

<210> 5399

<211> 204

<212> PRT

<213> B.fragilis

<400> 5399

Lys Gln Gly Tyr Gln Met Lys Arg Lys Leu Leu Ser Phe Ala Val Leu
 1 5 10 15
 Ile Thr Leu Leu Leu Val Pro Thr Val Asn Arg Ala Gln Ser Ile Lys
 20 25 30
 Asp Leu Phe Asn Lys Asp Asn Ile Ser Lys Val Val Asn Ala Val Thr
 35 40 45
 Gly His Thr Glu Thr Val Asp Met Thr Gly Thr Trp Arg Tyr Thr Gly
 50 55 60
 Ser Ala Ile Glu Phe Glu Ser Glu Asn Leu Leu Lys Lys Ala Gly Gly
 65 70 75 80
 Thr Val Ala Ala Ser Ala Ala Glu Gln Lys Leu Asp Glu Gln Leu Ala
 85 90 95
 Lys Val Gly Ile Lys Glu Gly Gln Leu Ser Phe Thr Phe Asn Ala Asp
 100 105 110
 Ser Thr Phe Val Ser Thr Leu Gly Lys Arg Lys Leu Asn Gly Thr Tyr
 115 120 125
 Ser Tyr Asp Ala Gly Thr Gln Met Leu His Leu Arg Tyr Met Lys Leu
 130 135 140

Ile Pro Met Asn Ala Lys Val Asn Tyr Thr Thr Gln Gln Met Asp Leu
 145 150 155 160
 Leu Phe Glu Ala Asp Lys Leu Leu Lys Leu Ile Thr Phe Leu Ser Ser
 165 170 175
 Lys Ser Ser Ser Ala Thr Leu Lys Ala Ile Ser Ser Leu Ala Asp Ser
 180 185 190
 Tyr Asp Gly Met Met Leu Gly Tyr Glu Leu Lys Arg
 195 200

<210> 5400

<211> 109

<212> PRT

<213> B.fragilis

<400> 5400

Lys Gln Tyr Gln Lys Phe Val Thr Ile Leu Val Leu Leu Ala Gly Ile
 1 5 10 15
 Val Pro Val Tyr Ala Ile Met Asn Ile Val Phe Asp Pro Asn Asp Asp
 20 25 30
 Gly Asn Leu Leu Ile Thr Leu Gly Thr Leu Thr Pro Ile Leu Gly Asp
 35 40 45
 Leu Leu Met Val Tyr Ala Phe Lys Asp Lys Tyr Gln Ile Leu Ile Ser
 50 55 60
 Asn His Arg Leu Gln Asn Lys Cys Tyr Leu Cys Ala Arg Tyr Asp Asp
 65 70 75 80
 Thr Cys His Tyr Cys Met Leu Leu Cys His Ser Leu Ala Asp Ser Pro
 85 90 95
 Tyr His Arg Thr Glu Arg Arg Phe Glu Cys Ser Val Phe
 100 105

<210> 5401

<211> 179

<212> PRT

<213> B.fragilis

<400> 5401

Met Met Lys Gln Ser Phe Leu Ala Asn Glu Arg Ile Tyr Leu Arg Ala
 1 5 10 15
 Val Glu Pro Glu Asp Leu Asp Leu Met Tyr Glu Met Glu Asn Asp Pro
 20 25 30
 Ser Met Trp Asp Ile Ser Ser Phe Thr Val Pro Tyr Ser Arg Phe Val
 35 40 45
 Leu Lys Gln Tyr Ile Glu Gly Ser Gln Ser Asp Met Phe Ala Asp Lys
 50 55 60
 Gln Leu Arg Leu Met Ile Met Arg Arg Lys Asp Asn Cys Thr Leu Gly
 65 70 75 80
 Thr Val Asp Ile Thr Asp Phe Val Pro Leu His Ser Arg Gly Ala Val
 85 90 95
 Gly Ile Ala Val His Ser Asn Tyr Arg Gln Glu Gly Tyr Ala Ser Asp
 100 105 110
 Ala Leu Lys Leu Leu Cys Glu Tyr Ala Phe Asn Phe Leu Phe Ile Lys
 115 120 125
 Gln Leu Tyr Ala His Ile Ala Val Asp Asn Glu Pro Ser Leu Arg Leu
 130 135 140
 Phe Asn Ser Cys Gly Phe Thr Gln Cys Gly Val Leu Lys Glu Trp Leu
 145 150 155 160
 Leu Thr His Glu Gly Tyr Lys Asp Ala Val Leu Val Gln Cys Met Asn
 165 170 175
 Pro Lys Arg

<210> 5402
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 5402
 Met Glu Glu Gln Ile Lys Arg Ile Val Lys Ser Gln Lys Val Gln Tyr
 1 5 10 15
 Ile Ser Phe Trp Ile Ile Pro Leu Leu Leu Val Leu Leu Gly Glu Ala
 20 25 30
 Gly Val Leu Pro Val Gly Ile Lys Ala Asp Asn Val Arg Ala Val Tyr
 35 40 45
 Val Phe Glu Thr Val Gly Ile Leu Met Thr Ala Val Cys Ile Pro Leu
 50 55 60
 Ser Leu Lys Leu Phe Ser Phe Val Leu Thr Lys Lys Ile Asp Gln Leu
 65 70 75 80
 Thr Phe Pro Val Ala Leu Ser Arg Tyr Met Leu Trp Gly Ala Val Arg
 85 90 95
 Leu Ala Leu Leu Glu Phe Val Val Val Phe Asn Leu Ala Gly Tyr Tyr
 100 105 110
 Phe Thr Leu Ser Ser Thr Gly Ala Leu Cys Ala Leu Ile Gly Leu Thr
 115 120 125
 Ala Ser Phe Phe Cys Leu Pro Gly Glu Lys Arg Leu Arg Ala Glu Leu
 130 135 140
 His Ile Asp Lys Glu
 145

<210> 5403
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 5403
 His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys
 20 25 30
 Ala Leu Thr Met Leu Ile Glu Lys Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Gly Val Asn Ser Leu Pro Lys Leu Lys Leu Ser Tyr Ser Ala
 50 55 60
 Cys Val Tyr Phe Phe Leu
 65 70

<210> 5404
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 5404
 Ile Lys Thr Lys Asn Met Arg Pro Tyr Ile Ile Ser His Met Met Thr
 1 5 10 15
 Ser Val Asp Gly Arg Ile Asp Cys Pro Met Val Gly Gln Leu Ser Thr
 20 25 30
 Asp Glu Tyr Tyr Ile Ala Leu Glu Lys Leu Gly Pro Cys Ser Lys Leu
 35 40 45
 Ser Gly Arg Ile Thr Thr Ala Leu Glu Cys Ser Ala Val Lys Glu Glu

50		55		60
Ser Thr Pro Met Glu Gly Thr Pro Ile Gly His Lys Ser Val Tyr Val				
65	70	75	80	
Ala Ser Lys Ser Asp Glu Tyr Thr Ile Ile Val Asp Thr Tyr Gly Lys				
	85	90	95	
Leu Arg Trp Gln Glu Gly Glu Ala Asp Gly His Pro Leu Leu Cys Ile				
	100	105	110	
Val Ser Glu Gln Val Ser Glu Glu Tyr Leu Glu Thr Leu Arg Thr Leu				
	115	120	125	
Gly Ile Ser Trp Ile Ala Ala Gly Ala Glu Arg Ile Asp Leu Pro Gln				
	130	135	140	
Ala Met Glu Leu Leu His Glu His Phe Gly Val Glu Arg Leu Ala Ile				
	145	150	155	160
Val Gly Gly Gly His Ile Cys Gly Gly Phe Leu Glu Ala Gly Leu Ile				
	165	170	175	
Asp Glu Val Ser Ile Met Val Ala Pro Gly Ile Asp Gly Arg Lys Gly				
	180	185	190	
Gln Thr Ala Val Phe Asp Gly Ile Ser Arg Met Glu Cys Asn Pro Tyr				
	195	200	205	
Lys Leu Lys Leu Glu Ser Val Glu Gln Trp Glu Thr Gly Ile Val Trp				
	210	215	220	
Leu Arg Tyr Lys Val Lys				
225	230			

<210> 5405

<211> 406

<212> PRT

<213> B.fragilis

<400> 5405

Asn Ile Thr Lys Met Lys Ile Tyr Ile Phe Ile Ile Leu Ala Ala Ala				
1	5	10	15	
Thr Ser Ile Ser Leu Ile Ser Cys Asp Ser Lys Gln Ser Asp Thr Arg				
	20	25	30	
Ser Ala Ser Ser Ser Glu Val His Arg Asn Asp Asp Gly His Asp His				
	35	40	45	
Arg Glu Ser Asp Gly Asp Asn His Ser Glu Ile Glu Asn Ser Gly Lys				
	50	55	60	
Gly His Glu Asp Glu Ile Ile Phe Thr Arg Gln Gln Ala Glu Ala Ile				
	65	70	75	80
Gly Leu Glu Ile Tyr Asn Val Val Pro Gly Ser Phe Ala Gln Val Ile				
	85	90	95	
Arg Thr Ser Gly Gln Ile Gln Ala Ala Gln Gly Asp Glu Glu Thr Ile				
	100	105	110	
Val Ala Thr Thr Asn Gly Val Val Ser Phe Pro Gly Gln Asn Ile Ile				
	115	120	125	
Glu Gly Ala Thr Val Gly Val Gly Ser Thr Ile Val Thr Ile Ser Ala				
	130	135	140	
Lys Asn Leu Tyr Glu Gly Asp Pro Val Ala Lys Ala Lys Ile Ala Tyr				
	145	150	155	160
Glu Thr Ala Leu Lys Glu Tyr Gln Arg Ala Glu Gly Leu Val Lys Asp				
	165	170	175	
Lys Ile Ile Ser Ala Lys Glu Phe Glu Gln Thr Arg Met Lys Tyr Glu				
	180	185	190	
Asn Ala Arg Thr Ala Tyr Glu Ala Gln Ala Ala Asn Val Thr Val Ser				
	195	200	205	
Gly Val Lys Val Thr Ser Pro Ile Ser Gly Tyr Val Lys Asn Arg Leu				
	210	215	220	
Val Ser Gln Gly Glu Tyr Val Thr Val Gly Gln Pro Val Ala Thr Ile				

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225          230          235          240
Ser Lys Asn Arg Arg Leu Gln Leu Arg Ala Asp Val Ser Glu Asn Tyr
          245          250          255
Phe Asn Glu Leu Lys Lys Ile Arg Gly Ala Asn Phe Met Val Ser Tyr
          260          265          270
Asn Asn Lys Val Tyr Arg Leu Glu Asp Leu His Gly Arg Leu Leu Ser
          275          280          285
Phe Gly Lys Ala Ala Ala Glu Ser Ser Phe Tyr Ile Pro Ile Thr Phe
          290          295          300
Glu Phe Asp Asn Ile Gly Asp Phe Ile Pro Gly Ser Tyr Val Glu Val
305          310          315          320
Tyr Leu Leu Thr Thr Pro Gln Asn Asn Val Phe Ser Ile Pro Val Thr
          325          330          335
Ala Leu Thr Glu Glu Gln Gly Ile Tyr Phe Val Tyr Leu Gln Ile Ala
          340          345          350
Glu Glu Glu Phe Val Lys Arg Glu Val Gly Ile Gly Glu Ser Asp Gly
          355          360          365
Lys Asn Val Arg Ile Leu Ser Gly Leu Lys Glu Gly Glu Arg Val Val
370          375          380
Val Lys Gly Ala Tyr Gln Val Lys Leu Ala Ser Ser Ser Val Leu
385          390          395          400
Pro Glu Gly His Ser His
          405

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<210> 5406
<211> 123
<212> PRT
<213> B.fragilis

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<400> 5406
Ile Thr Lys Lys Glu Ile Gly Tyr Gly Lys Ile Thr Ile Asn Ser Ile
1          5          10          15
Ser Asn Asp Asn Arg Gln Thr Leu Pro Arg Phe Gln Pro Glu Ala Met
          20          25          30
Arg Ala Asn Thr Arg Ile Val Asn Ala Leu Gln Ala Phe Gly Arg Thr
          35          40          45
Arg Ser Met Thr Ser Ala Gln Val Ala Leu Gly Trp Leu Leu Gln Lys
          50          55          60
Ala Pro Trp Ile Val Pro Ile Pro Gly Thr Thr Lys Leu Ser His Leu
65          70          75          80
Glu Glu Asn Leu Arg Thr Leu Asp Phe Asn Ile Ser Ser Gly Glu Trp
          85          90          95
Lys Glu Leu Glu Asp Ala Val Ala Ala Ile Pro Val Val Gly Asp Arg
          100          105          110
Tyr Asn Ala Glu Gln Gln Arg Gln Val Gly Arg
          115          120

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<210> 5407
<211> 379
<212> PRT
<213> B.fragilis

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<400> 5407
Lys Ile Met Asp Arg Arg Asn Phe Leu Arg Thr Ala Ser Ser Phe Ala
1          5          10          15
Leu Leu Ala Ala Gly Ala Thr Thr Gly Val Ser Arg Val Phe Thr Glu
          20          25          30
Pro Pro Ile Ser Ser Leu Ser Gly Asn Leu Ser Asp Lys Asn Thr Pro
          35          40          45

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Asn Ala Gly Asp Thr Met Glu Tyr Arg Lys Leu Gly Glu Leu Asp Val
 50      55      60
Ser Ala Ile Gly Leu Gly Cys Leu Pro Met Val Gly Tyr Tyr Gly Gly
 65      70      75      80
Lys Tyr Asp Lys Lys Asp Met Ile Ala Leu Ile Arg Arg Ala Tyr Asp
      85      90      95
Lys Gly Val Thr Phe Phe Asp Thr Ala Glu Val Tyr Gly Pro Tyr Ile
      100      105      110
Ser Glu Glu Trp Val Gly Glu Ala Leu Ala Pro Phe Arg Asp Lys Val
      115      120      125
Lys Ile Gly Thr Lys Phe Gly Phe Gly Val Glu Glu Lys Gln Pro Thr
      130      135      140
Ala Ile Asn Ser Arg Pro Asp His Ile Arg Trp Ala Val Glu Gly Ser
      145      150      155      160
Leu Lys Arg Leu Arg Thr Asp His Ile Asp Leu Leu Tyr Gln His Arg
      165      170      175
Val Asp Pro Lys Val Pro Met Glu Glu Val Ala Gly Thr Val Lys Asp
      180      185      190
Leu Met Gln Glu Gly Lys Val Leu His Trp Gly Leu Ser Glu Ala Ser
      195      200      205
Ala Ser Ser Ile Arg Arg Ala His Ala Val Cys Pro Leu Ser Ala Val
      210      215      220
Gln Ser Glu Tyr Ala Ile Trp Trp Arg Glu Pro Glu Thr Lys Ile Phe
      225      230      235      240
Pro Thr Leu Glu Lys Leu Gly Ile Gly Phe Val Pro Tyr Cys Pro Leu
      245      250      255
Gly Arg Ala Phe Leu Thr Gly Ile Ile Asn Glu Asn Ser Arg Phe Tyr
      260      265      270
Glu Gly Asp Arg Arg Trp Asn Leu Pro Gln Phe Thr Pro Glu Ala Leu
      275      280      285
Lys His Asn Met Pro Leu Ile Ala Leu Val Arg Lys Trp Ala Glu Arg
      290      295      300
Lys Gly Val Thr Leu Ala Gln Phe Ala Leu Leu Trp Met Leu Ser Arg
      305      310      315      320
Lys Ser Trp Ile Ala Pro Ile Pro Gly Thr Thr Asn Pro Ala His Leu
      325      330      335
Asp Asp Leu Leu Gly Ala Gly Thr Val Arg Leu Ser Ala Trp Glu Met
      340      345      350
Glu Glu Phe Asp Lys Glu Tyr Ala Lys Ile Asp Leu Met Gly His Arg
      355      360      365
Ala Asp Pro Phe Thr Glu Ser Gln Ile Asp Lys
      370      375

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<210> 5408

<211> 225

<212> PRT

<213> B.fragilis

<400> 5408

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Ser Ile Thr Leu Thr Lys Gly Cys Trp Ser Ala Tyr Pro Thr Lys Val
 1      5      10      15
Phe Pro Asp Arg Asn His Thr Asp Arg Leu Trp Gly Arg Thr Ser Asn
 20      25      30
Asn Gly Gln Thr Ala Gln Thr Ala Asp Thr Leu Pro Ala Ile Leu Arg
 35      40      45
Val Val Leu Asn Asn Gly Ile Glu Met Pro Gln Leu Gly Val Gly Thr
 50      55      60
Ser Thr Leu Lys Glu Thr Ala Ala Glu Cys Val Lys His Ala Ile Gly
 65      70      75      80

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Leu Gly Tyr Arg Leu Val Asp Val Ala Gln Gly Tyr Asp Asn Glu Ala
 85 90 95
 Glu Val Trp Tyr Gly Ile Lys Glu Ser Gly Ile Gly Arg Ser Glu Val
 100 105 110
 Phe Ile Ile Ser Lys Val Ser Pro Asp Ala Val Arg Ser Gly Lys Val
 115 120 125
 Arg Glu Ser Leu Asp Arg Thr Ile Glu Ala Phe Gly Gly Thr Tyr Val
 130 135 140
 Asp Leu Met Leu Ile His Trp Pro Val Ala Arg Lys Val Lys Glu Arg
 145 150 155 160
 Trp Arg Ile Met Glu Lys Tyr Val Asp Val Gly Lys Ile Arg Ala Ile
 165 170 175
 Gly Val Ser Asn Phe Asn Pro His His Val Asp Glu Leu Leu Ala Tyr
 180 185 190
 Ala Arg Ile Lys Pro Val Val Asn Gln Ile Lys Ile His Pro Tyr Met
 195 200 205
 Glu His Gln Glu Val Val Gly Asn Thr Phe Ala Lys Gly Ile Gln Val
 210 215 220
 Gln
 225

<210> 5409

<211> 342

<212> PRT

<213> B.fragilis

<400> 5409

Lys Asn Asn Ser Met Asp Lys Arg Lys Leu Gly Gln Leu Glu Val Ser
 1 5 10 15
 Pro Ile Gly Met Gly Cys Met Gly Phe Ser His Gly Tyr Gly Gln Val
 20 25 30
 Pro Pro Glu Ala Tyr Ala Ile Glu Ala Ile Arg Gly Ala Tyr Asp Tyr
 35 40 45
 Gly Cys Thr His Phe Asp Thr Ala Glu Ala Tyr Gly Lys Glu Gln Phe
 50 55 60
 Tyr Ala Gly His Asn Glu Glu Leu Val Gly Lys Ala Ile Glu Pro Phe
 65 70 75 80
 Arg Lys Lys Val Val Leu Ala Thr Lys Phe His Ile Gly Glu Leu Ser
 85 90 95
 Lys Pro Asp Glu Thr Asn Leu Tyr Arg Glu Val Arg Arg His Leu Glu
 100 105 110
 Asp Ser Met Ser Arg Leu Arg Thr Asp Tyr Ile Asp Leu Tyr Tyr Leu
 115 120 125
 His Arg Ile Ser Glu Ala Val Arg Leu Glu Asp Val Ala Thr Val Met
 130 135 140
 Gly Arg Leu Ile Gln Glu Gly Leu Ile Arg Gly Trp Gly Leu Ser Gln
 145 150 155 160
 Val Ser Ala Asp Gln Ile Arg Ala Ala His Lys Ile Thr Pro Leu Ser
 165 170 175
 Ala Val Gln Asn Ile Tyr Ser Met Val Glu Arg Asp Cys Glu Thr Glu
 180 185 190
 Ile Phe Pro Val Cys Leu Glu Lys Gly Ile Gly Val Val Pro Phe Ser
 195 200 205
 Pro Ile Ala Ser Gly Phe Leu Ser Gly Lys Val Thr Pro Gln Asp Gln
 210 215 220
 Phe Gly Phe Asp Asp Val Arg Lys Phe Val Pro Gln Leu Ser Lys Glu
 225 230 235 240
 Asn Ile Glu Ala Asn Gln Pro Ile Leu Asp Leu Leu His Arg Phe Ala
 245 250 255

Val Glu Lys His Ala Thr Asn Ala Gln Ile Ser Leu Ala Trp Met Leu
 260 265 270
 His Lys Tyr Pro Asn Val Val Pro Ile Pro Gly Ser Lys Asn Gln Glu
 275 280 285
 Arg Ile Leu Glu Asn Leu Gly Ala Trp Asn Val Thr Leu Ser Asp Asp
 290 295 300
 Glu Phe Arg Gln Leu Gln Ser Ala Leu Asp Glu Cys Lys Val His Gly
 305 310 315 320
 His Arg Gly Cys Val Glu Thr Glu Gln Thr Ser Phe Gly Lys Gln Trp
 325 330 335
 Ser Glu Glu Thr Asp Lys
 340

<210> 5410

<211> 292

<212> PRT

<213> B.fragilis

<400> 5410

Asn Lys Glu Ser Met Lys Val Ile Ser Asn Ala Glu Phe Gly Gly Glu
 1 5 10 15
 Arg Pro Leu Phe Glu Ser His Asp Leu Arg Leu Glu Asn Val Ile Ile
 20 25 30
 Arg Ala Gly Glu Ser Ala Ile Lys Glu Cys Ser Asn Ile Glu Ala Val
 35 40 45
 Asp Cys Arg Phe Glu Gly Asn Tyr Pro Phe Trp His Val His Gly Phe
 50 55 60
 Val Ile Asp Arg Cys Phe Phe Asp Val Gly Gly Arg Ser Ala Leu Trp
 65 70 75 80
 Tyr Ser Asp Asn Leu Lys Met Thr Asn Thr Arg Ile Asp Ala Pro Lys
 85 90 95
 Met Phe Arg Glu Met His Asp Ile Glu Ile Glu Asn Val Glu Ile Asn
 100 105 110
 Asp Ala Asp Glu Val Phe Trp Arg Cys Lys Asn Leu Asp Ile Lys Asn
 115 120 125
 Leu Lys Leu His Gly Gly Thr Tyr Pro Phe Met Phe Ser Ser Asn Ile
 130 135 140
 Arg Ile Asp Gly Leu Glu Ser Asp Ser Lys Tyr Val Phe Gln Tyr Val
 145 150 155 160
 Lys Asn Val Glu Leu Arg Asn Ala Lys Ile Thr Thr Lys Asp Ala Phe
 165 170 175
 Trp Glu Val Glu Asn Val Thr Ile Tyr Asp Ser Glu Leu Asn Gly Glu
 180 185 190
 Tyr Leu Gly Trp His Ser His Asn Leu Arg Leu Val Asn Cys His Ile
 195 200 205
 Thr Gly Glu Gln Pro Leu Cys Tyr Ala His Asp Leu Val Leu Glu Asn
 210 215 220
 Cys Thr Phe Gly Pro Asp Cys Asp Arg Ala Phe Glu Tyr Ser Ser Val
 225 230 235 240
 Gln Ala Thr Ile Lys Gly Ala Ile Gly Gly Val Lys Asn Pro Arg Thr
 245 250 255
 Gly Cys Ile Thr Ala Glu Ser Tyr Gly Glu Ile Ile Leu Asp Glu Asn
 260 265 270
 Ile Lys Ala Pro Ala Asp Cys Lys Leu Lys Leu Trp Asp Glu Lys Thr
 275 280 285
 Cys Phe Thr Asp
 290

<210> 5411

<211> 287
 <212> PRT
 <213> B.fragilis

<400> 5411

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Arg Tyr Tyr Gly Met Asp Phe Lys Glu Leu Asn Asn Gly Val Lys Met
1          5          10          15
Pro Ile Gln Gly Phe Gly Val Phe Gln Ile Pro Asp Ala Thr Glu Cys
          20          25          30
Glu Arg Val Val Thr Asp Ala Leu Ala Val Gly Tyr Arg Leu Ile Asp
          35          40          45
Thr Ala Ser Val Tyr Gly Asn Glu Arg Ala Val Gly Met Ala Ile Arg
          50          55          60
Lys Ser Gly Ile Pro Arg Glu Glu Leu Phe Ile Thr Thr Lys Ala Trp
65          70          75          80
Ile Ser Glu Met Gly Tyr Glu Arg Thr Leu Arg Ala Leu Asp Thr Ser
          85          90          95
Leu Ala Arg Leu Gly Leu Asp Tyr Leu Asp Leu Tyr Leu Ile His Met
          100         105         110
Pro Phe Gly Asp Tyr Tyr Gly Ala Trp Arg Ala Met Glu Lys Leu Tyr
          115         120         125
Ala Lys Gly Arg Val Arg Ala Ile Gly Val Cys Asn Phe Glu Pro Asp
          130         135         140
Arg Leu Leu Asp Leu Cys His Asn Ala Asn Val Ile Pro Ala Val Asn
145         150         155         160
Gln Ile Glu Val His Pro Tyr Thr Pro Gln Thr Asp Ala Ile Arg Thr
          165         170         175
Met Gln Glu Leu Gly Ile Gln Ala Glu Ala Trp Gly Pro Leu Ala Glu
          180         185         190
Gly Arg Asn Gly Leu Phe Thr Asp Asp Ile Leu Thr Gly Ile Ala Arg
          195         200         205
Lys Tyr Asp Lys Ser Ala Ala Gln Val Val Leu Arg Trp His Leu Gln
          210         215         220
Arg Gly Val Val Ala Ile Pro Lys Ser Val His Arg Gln Arg Met Gln
225         230         235         240
Glu Asn Phe Asn Ile Gly Asp Phe Met Leu Thr Pro Glu Asp Met Ala
          245         250         255
Ala Ile Ala Ser Met Asn Met Gly Tyr Asp Met Ile Leu Asp Leu His
          260         265         270
Ala Pro Glu Glu Val Gln Arg Leu Tyr Gly Ile Glu Cys Pro Ala
          275         280         285

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<210> 5412
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 5412

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Leu Glu Ile Met Ile Lys Ala Ile Gly Leu Thr Lys Ile Phe Arg Thr
1          5          10          15
Glu Ser Val Gln Thr Ile Ala Leu Asn Glu Ile Ser Ile Asn Ile Ser
          20          25          30
Glu Gly Glu Phe Val Ala Ile Met Gly Pro Ser Gly Cys Gly Lys Ser
          35          40          45
Thr Leu Leu Asn Ile Leu Gly Leu Leu Asp Asn Pro Thr Ser Gly Glu
          50          55          60
Leu Trp Phe Ile Gly Lys Glu Val Ser Arg Tyr Ser Glu Asn Asp Arg
65          70          75          80
Thr Asp Met Arg Asn Gly Asn Ile Gly Phe Val Phe Gln Ser Phe Asn

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210		215		220
Gln Thr Ile Ser Ser Asn Glu His Ser Arg Ile Phe Val Phe Asp Asp				
225		230		235
Trp Met Ser Arg Gln Asn Phe Phe Lys Gln Phe Leu Ser Gly Ile Phe				
	245		250	255
Ile Val Ile Val Met Thr Gly Leu Asp Gln Asp Met Met Gln Lys Asn				
	260		265	270
Leu Ser Cys Arg Ser Leu Arg Asp Ala Gln Lys Asn Met Tyr Cys Tyr				
	275		280	285
Gly Phe Ala Phe Ala Pro Leu Asn Leu Leu Phe Leu Gly Leu Gly Ile				
	290		295	300
Leu Leu Leu Val Leu Ala Gln Glu Met Gln Leu Glu Leu Pro Ala Ala				
305		310		315
Gly Asp Asp Ile Leu Pro Leu Phe Ala Thr Gln Gly Tyr Leu Gly Glu				
	325		330	335
Gly Val Leu Ile Leu Phe Thr Ile Gly Ile Ile Ala Ala Ala Phe Ser				
	340		345	350
Asn Ser Asp Ser Ala Leu Thr Ala Met Thr Thr Ser Phe Cys Ile Asp				
	355		360	365
Leu Leu Asp Thr Gly Lys Asp Thr Glu Glu Glu Ala Arg Arg Lys Arg				
	370		375	380
Asn Arg Val His Ile Gly Leu Ser Val Leu Leu Ile Phe Phe Ile Cys				
385		390		395
Leu Val Asp Ala Leu Asn Asn Gln Ser Val Ile Asp Ala Ile Tyr Ile				
	405		410	415
Ile Ala Ser Tyr Thr Tyr Gly Pro Leu Leu Gly Met Phe Ala Phe Gly				
	420		425	430
Leu Phe Thr Gln Arg Lys Thr Asn Asp Arg Trp Val Pro Phe Ile Ala				
	435		440	445
Ile Ala Ser Pro Leu Ile Cys Tyr Ala Ala Asp Arg Phe Ala Arg Gln				
	450		455	460
Glu Thr Gly Tyr Gln Phe Gly Tyr Glu Leu Leu Met Leu Asn Gly Ile				
465		470		475
Leu Thr Phe Ala Gly Ile Trp Ile Val Ser Lys Lys Gln Leu Lys Asn				
	485		490	495
Glu Phe				

<210> 5415

<211> 141

<212> PRT

<213> B.fragilis

<400> 5415

Tyr Pro Thr Ile Gly Arg Gln Pro Arg Pro Ile Ala Asp Thr Ser Ser				
1	5	10	15	
Ser Pro Ser Leu Arg Tyr Ser Ile Val Ser Pro Ala Phe Gly Val Phe				
	20	25	30	
Leu Ser Asp Lys Phe Pro Asp Lys Glu Glu Ile Gly Gly Ser Val Asn				
	35	40	45	
Thr Arg Glu Thr Pro Val Val Ala Pro Ala Ala Ser Ser Ala Lys Leu				
	50	55	60	
Asp Ala Val Leu Lys Lys Phe Leu Arg Ser Ile Ile Phe Tyr Phe Phe				
65	70	75	80	
Ile Val His Phe Met Ile Ala Asn Leu Pro Arg Leu Asn Lys Ser Ala				
	85	90	95	
Cys Ile Arg Phe Thr Asp Ile Tyr Thr Arg Ile Leu Glu Ile Val His				
	100	105	110	
Glu Leu Arg Phe Pro Ser Ile Gln Tyr Phe Ser Phe Leu Phe Lys Lys				

115	120	125
Ile Met Gly Leu Ala Pro Asn Glu Tyr Arg Leu Ile Asn		
130	135	140

<210> 5416
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 5416

His Cys Asn Met Phe Ala Thr Trp Leu Gln Glu Ile Tyr Ser Ile Phe		
1	5	10 15
Val Pro Lys Val Lys Thr Lys Gln Met Lys Arg Ile Phe Phe Val Tyr		
	20	25 30
Pro Leu Ala Ile Ala Thr Leu Phe Leu Ile Val Leu Ser Ala Ile Pro		
	35	40 45
His His His His Lys Glu Met Met Cys Thr Val Met Glu Leu Cys Glu		
	50	55 60
Gln Asp Asp Ile Tyr Asn Asp Gly His Thr Asp His Glu Ala Gly Gln		
65	70	75 80
Asp Ala His Asn Glu Asn Thr Cys Val Ser Gln Ala Gly Tyr Ile Phe		
	85	90 95
Pro Ser Ser Val Asp Lys Ser Asn Leu His Asp Gly Ser Leu Met Asn		
	100	105 110
Ile His Leu Pro Val Leu Tyr Leu Phe Ala Asp Ile Leu Thr Ile His		
	115	120 125
Phe Asp Ile Pro Ile Ser Glu Asn Thr Tyr Asp Arg Tyr Val Val Ser		
	130	135 140
Tyr Thr Ser Val Val Leu Gly Glu Ser Ser Gly Leu Arg Ala Pro Pro		
145	150	155 160
Tyr Phe Phe Ser		

<210> 5417
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 5417

Ile Arg Gly Met Asn Ile Asn Thr Asp Ile Phe Lys Ile Gln Ser Asn		
1	5	10 15
Asn Val Met Pro Ser Arg Gly Lys Ile Leu Ile Ser Glu Pro Phe Leu		
	20	25 30
His Asp Val Thr Phe Gly Arg Ser Val Val Leu Leu Val Asp His Thr		
	35	40 45
Glu Glu Gly Ser Met Gly Leu Ile Ile Asn Lys Pro Leu Pro Leu Met		
	50	55 60
Leu Asn Asp Ile Ile Lys Glu Phe Lys Tyr Ile Glu Asp Ile Pro Leu		
65	70	75 80
His Lys Gly Gly Pro Ile Gly Thr Asp Thr Leu Phe Tyr Leu His Thr		
	85	90 95
Leu His Glu Ile Pro Gly Thr Leu Pro Ile Asn Asn Gly Leu Tyr Leu		
	100	105 110
Asn Gly Asp Phe Asp Ala Ile Lys Lys Tyr Ile Leu Gln Gly Asn Pro		
	115	120 125
Ile Lys Gly Lys Ile Arg Phe Leu Gly Tyr Ser Gly Trp Glu Cys		
	130	135 140
Glu Gln Leu Ile Gln Glu Ile Lys Glu Asn Thr Trp Ile Ile Ser Lys		
145	150	155 160

Glu Glu Asn Thr Tyr Leu Met Asn Glu Asp Ile Lys Gly Met Trp Lys
 165 170 175
 Glu Ala Leu Gly Lys Leu Gly Ser Lys Tyr Glu Thr Trp Ser Arg Phe
 180 185 190
 Pro Gln Val Pro Ser Leu Asn
 195

<210> 5418
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 5418
 Cys Thr Gly Asn Lys Asn Ser Ala Thr Val Gly Ser Phe Gln Pro Arg
 1 5 10 15
 Gly Glu Asp Tyr Leu Phe Met Tyr His Trp Leu Asp Glu Phe Ala Tyr
 20 25 30
 Arg Thr Thr Met Ser Trp Trp Leu Phe Leu Gly Gly Gly Leu Ile Ile
 35 40 45
 Ala Gly Ile Thr Leu Leu Thr Val Ile Gly Gln Thr Trp Arg Thr Ala
 50 55 60
 Ser Gln Asn Pro Val Arg Ser Leu Arg Tyr Glu
 65 70 75

<210> 5419
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 5419
 Asn Pro Cys Phe Gly Arg Asp Glu Gln Phe Leu Thr Arg Asn Thr Thr
 1 5 10 15
 Phe Pro Asn Ser His Thr Asp Arg Pro Phe Ile Ser Ile Asp Arg Ser
 20 25 30
 Gly Val Asp Glu Pro Ile Ala Asp Gly Lys Arg Ile Gly Asn Asn Ser
 35 40 45
 Phe Ala Leu Gly Gly Ile Gly Tyr Leu Lys Asp Thr Lys Ala Leu Tyr
 50 55 60
 Arg His Leu Tyr Ser Val Ile Gln Phe Phe Glu Ile His Thr Ile Ile
 65 70 75 80
 Ser Leu

<210> 5420
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 5420
 Lys Thr Lys Phe Met Asp Leu Lys Lys Thr Thr Phe Tyr Leu Phe Thr
 1 5 10 15
 Leu Phe Ser Leu Met Leu Ile Ser Cys Ser Asn Asp Asp Glu Asn Lys
 20 25 30
 Asn Asp Ala Gln Val Thr Val Thr Val Val Ser Ala Asp Gly Lys Pro
 35 40 45
 Leu Pro Asn Glu Ile Val Gln Met Phe Asp Glu Lys Thr Tyr Glu Glu
 50 55 60
 Phe Lys Lys Asp Asn Arg Thr Thr Pro Thr Ala Tyr Ala Leu Thr Asn
 65 70 75 80

Ser Thr Gly Val Ala Thr Phe Ile Phe Thr Tyr Asp Lys Trp Phe Glu
 85 90 95
 Ser Asn Lys Asp Arg Phe Phe Thr Phe Ala Val Gln Tyr Gly Ser Gly
 100 105 110
 Thr Glu Asn Tyr Glu Ile Trp Ser Ala Gly Arg Thr Val Arg Pro Gly
 115 120 125
 Ser Val Thr Gln Ile Glu Leu Lys Leu Lys Pro Leu
 130 135 140

<210> 5421

<211> 61

<212> PRT

<213> B.fragilis

<400> 5421

Thr Ser Ser Ser Asp Ile Leu Phe Leu Asn Phe Ile Arg Ser Thr Cys
 1 5 10 15
 Val Phe Phe Ile Ser Phe Val Ile Val Met Val Val Met Ile Ala Ile
 20 25 30
 Phe Gly Asn Lys Lys Gln Lys Ser Lys Lys Ile Asp Val Tyr Phe Leu
 35 40 45
 Ala Phe Leu His Gly Asp Asp Ser Cys His Gly Ile Pro
 50 55 60

<210> 5422

<211> 127

<212> PRT

<213> B.fragilis

<400> 5422

Val Lys Glu Ser Val Arg Ile Phe Arg Phe Ala Val Ile Gly Thr Leu
 1 5 10 15
 Asn Ala Leu Ile Thr Ala Phe Val Ile Trp Leu Met Met Asp Glu Leu
 20 25 30
 Ser Tyr Asp Tyr Ile Pro Ala Asn Ile Thr Ala Tyr Ile Val Ala Gln
 35 40 45
 Ile His Asn Phe Ile Trp Ser Lys Tyr Trp Ile Phe Pro Ile Glu Asn
 50 55 60
 Lys Lys Asn Asn Ile Trp Lys Gln Met Leu Phe Phe Cys Ser Ala Phe
 65 70 75 80
 Gly Leu Ala Tyr Ser Ala Gln Phe Leu Phe Leu Val Thr Leu Val Glu
 85 90 95
 Cys Gly Asp Val Asn Glu Tyr Leu Ala Gln Phe Leu Gly Leu Phe Ile
 100 105 110
 Tyr Gly Thr Val Asn Phe Ile Val Asn Lys Lys Leu Thr Phe Arg
 115 120 125

<210> 5423

<211> 1058

<212> PRT

<213> B.fragilis

<400> 5423

Lys Ser Ser Pro Tyr Gln Ser Ile Thr Ser His Gln Pro Leu Ile Val
 1 5 10 15
 Asn Cys Met Phe Ser Lys Phe Phe Ile Asn Arg Pro Ile Phe Ala Thr
 20 25 30
 Val Leu Ala Leu Ile Ile Val Val Ala Gly Leu Val Thr Leu Asn Ile
 35 40 45

Leu Pro Val Ala Gln Phe Pro Glu Ile Thr Pro Pro Thr Val Gln Val
 50 55 60
 Ser Ala Phe Tyr Pro Gly Ala Asn Ala Glu Thr Val Ala Gln Thr Val
 65 70 75 80
 Gly Ile Pro Ile Glu Gln Gln Val Asn Gly Val Asp Gly Met Leu Tyr
 85 90 95
 Met Ser Ser Thr Ala Ser Ser Ser Gly Ala Tyr Ser Leu Thr Ile Thr
 100 105 110
 Phe Ala Val Gly Thr Asp Ile Asp Met Ala Thr Val Gln Val Gln Asn
 115 120 125
 Arg Val Ser Val Ala Gln Ser Ser Leu Pro Glu Pro Val Ile Val Gln
 130 135 140
 Gly Val Thr Val Gln Lys Gln Ser Ser Asn Ile Val Met Phe Leu Thr
 145 150 155 160
 Met Gln Ala Gln Asp Ser Val Tyr Asp Gly Leu Tyr Leu Thr Asn Tyr
 165 170 175
 Ala Gln Leu Asn Leu Val Asp Gln Leu Thr Arg Val Pro Gly Val Gly
 180 185 190
 Ala Val Asn Val Met Gly Ala Gly Asn Tyr Ser Met Arg Val Trp Leu
 195 200 205
 Asp Pro Glu Ala Met Arg Ile Arg Asn Leu Ser Pro Ala Gln Ile Tyr
 210 215 220
 Gln Ala Ile Gln Ser Gln Asn Ile Glu Val Ser Ala Gly Tyr Ile Gly
 225 230 235 240
 Gln Pro Ile Gly Lys Asn Asn Asn Asn Ala Tyr Gln Tyr Thr Leu Asn
 245 250 255
 Val Gln Gly Arg Leu Thr Ser Pro Glu Glu Phe Gly Asn Ile Ile Ile
 260 265 270
 Arg Thr Glu Glu Gly Gly Lys Met Leu Arg Leu Lys Asp Val Ala Arg
 275 280 285
 Ile Asp Leu Gly Ser Ser Ser Tyr Asn Val Val Ser Lys Leu Lys Gly
 290 295 300
 His Pro Thr Ala Ala Ile Ala Ile Tyr Gln Gln Pro Gly Ser Asn Ser
 305 310 315 320
 Leu Asp Val Ser Lys Gly Val Lys Ala Lys Met Gln Glu Leu Ala Gln
 325 330 335
 Asn Phe Pro Ala Gly Val Ser Tyr Asn Val Thr Leu Asp Thr Thr Asp
 340 345 350
 Val Ile Asn Ala Ser Ile Asp Glu Val Leu Val Thr Phe Leu Glu Thr
 355 360 365
 Thr Leu Leu Val Val Leu Val Ile Phe Leu Phe Leu Gln Asn Trp Arg
 370 375 380
 Ala Val Ile Ile Pro Cys Ile Thr Ile Pro Val Ser Leu Ile Gly Thr
 385 390 395 400
 Leu Ala Val Met Ala Ala Leu Gly Phe Ser Ile Asn Thr Leu Thr Leu
 405 410 415
 Phe Gly Leu Ile Leu Ala Val Ala Ile Val Val Asp Asp Ala Ile Val
 420 425 430
 Val Val Glu Asn Ala Ser Arg Leu Leu Glu Thr Gly Gln Tyr Ser Pro
 435 440 445
 Lys Glu Ala Val Thr Lys Ala Met Gly Glu Ile Thr Gly Pro Ile Val
 450 455 460
 Gly Val Val Leu Val Leu Leu Ala Val Phe Ile Pro Thr Thr Leu Ile
 465 470 475 480
 Ser Gly Ile Ser Gly Gln Leu Tyr Lys Gln Phe Ala Leu Thr Ile Ala
 485 490 495
 Ala Ser Thr Val Leu Ser Gly Ile Asn Ser Leu Thr Leu Thr Pro Ala
 500 505 510
 Leu Cys Ala Leu Phe Leu Glu His Asn Lys Pro Ser Asn Phe Phe Ile

515					520					525					
Tyr	Lys	Gly	Phe	Asn	Lys	Val	Tyr	Asp	Lys	Thr	Gln	Asn	Leu	Tyr	Asp
530					535					540					
Arg	Ile	Val	Lys	Gly	Leu	Val	Arg	Pro	Gly	Leu	Ala	Leu	Ile	Ser	
545					550					555					
Tyr	Gly	Ile	Ile	Thr	Ala	Val	Ala	Val	Ile	Leu	Phe	Met	Lys	Trp	Pro
565					570					575					
Ser	Thr	Phe	Val	Pro	Asp	Glu	Asp	Asp	Gly	Tyr	Phe	Ile	Ala	Val	Ile
580					585					590					
Gln	Leu	Pro	Pro	Ala	Ser	Ser	Leu	Glu	Arg	Thr	Gln	Ala	Val	Gly	Arg
595					600					605					
Lys	Val	Asn	Gln	Ile	Leu	Asp	Ser	Tyr	Pro	Glu	Val	Lys	Asp	Tyr	Ile
610					615					620					
Gly	Ile	Ser	Gly	Phe	Ser	Ile	Met	Gly	Gly	Gly	Glu	Gln	Ser	Asn	Thr
625					630					635					
Gly	Thr	Tyr	Phe	Val	Val	Leu	Lys	Asn	Trp	Asp	Gln	Arg	Lys	Gly	Lys
645					650					655					
Glu	His	Thr	Ala	Ala	Val	Val	Glu	Arg	Phe	Asn	Glu	Met	Ala	Tyr	
660					665					670					
Gly	Ile	Gln	Glu	Ala	Gln	Ile	Phe	Ala	Met	Val	Pro	Pro	Ala	Ile	Pro
675					680					685					
Gly	Leu	Gly	Ala	Ser	Gly	Gly	Leu	Gln	Leu	Gln	Leu	Glu	Asp	Arg	Asn
690					695					700					
Asn	Leu	Gly	Pro	Thr	Glu	Met	Gln	Arg	Ala	Val	Glu	Thr	Leu	Met	Ala
705					710					715					
Thr	Tyr	His	Thr	Gln	Pro	Ala	Leu	Ala	Ser	Ile	Ser	Ser	Met	Tyr	Gln
725					730					735					
Ala	Asn	Val	Pro	Gln	Tyr	Phe	Leu	Asn	Ile	Asp	Arg	Asp	Lys	Val	Gln
740					745					750					
Phe	Met	Gly	Ile	Gln	Leu	Asp	Asn	Val	Phe	Ser	Thr	Leu	Ser	Tyr	Tyr
755					760					765					
Met	Gly	Ala	Ala	Tyr	Val	Asn	Asp	Phe	Val	Gln	Phe	Gly	Arg	Ile	Tyr
770					775					780					
Gln	Val	Lys	Ile	Glu	Ala	Gly	Glu	Gln	Ala	Gln	Lys	Val	Ile	Asp	Asp
785					790					795					
Val	Leu	Lys	Leu	Ser	Val	Pro	Asn	Ala	Lys	Gly	Asp	Met	Val	Pro	Phe
805					810					815					
Ser	Ser	Phe	Thr	Lys	Val	Glu	Glu	Arg	Leu	Gly	Met	Asp	Gln	Ile	Ser
820					825					830					
Arg	Tyr	Asn	Met	Tyr	Ser	Thr	Ala	Ser	Ile	Thr	Cys	Asn	Val	Ala	Ser
835					840					845					
Gly	Ser	Ser	Ser	Gly	Glu	Gly	Ile	Gln	Gln	Met	Glu	Asp	Leu	Ile	Lys
850					855					860					
Glu	Gln	Leu	Gly	Asn	Glu	Phe	Gly	Tyr	Glu	Trp	Thr	Ser	Val	Ala	Tyr
865					870					875					
Gln	Glu	Thr	Gln	Ala	Gly	Asn	Thr	Thr	Thr	Ile	Val	Phe	Ile	Met	Ala
885					890					895					
Leu	Leu	Val	Ala	Phe	Leu	Val	Leu	Ala	Ala	Gln	Tyr	Glu	Ser	Trp	Thr
900					905					910					
Ser	Pro	Leu	Ser	Ala	Ile	Met	Gly	Leu	Pro	Met	Ala	Leu	Leu	Gly	Ala
915					920					925					
Met	Ile	Gly	Cys	Ser	Val	Met	Gly	Thr	Pro	Val	Ser	Ile	Tyr	Thr	Gln
930					935					940					
Ile	Gly	Ile	Ile	Leu	Leu	Ile	Ala	Leu	Ser	Ala	Lys	Asn	Gly	Ile	Leu
945					950					955					
Ile	Val	Glu	Phe	Ala	Arg	Asp	Phe	Arg	Ala	Glu	Gly	Asn	Ser	Ile	Arg
965					970					975					
Asp	Ala	Ala	Tyr	Glu	Ala	Gly	His	Val	Arg	Leu	Arg	Pro	Ile	Leu	Met
980					985					990					

Thr Ser Phe Ala Phe Val Leu Gly Val Met Pro Leu Leu Phe Ala Thr
 995 1000 1005
 Gly Ala Gly Ala Gln Ser Arg Ile Ala Leu Gly Ala Ala Val Val Phe
 1010 1015 1020
 Gly Met Ala Leu Asn Thr Leu Leu Ala Thr Ile Tyr Ile Pro Asn Phe
 1025 1030 1035 1040
 Tyr Glu Leu Met Gln Lys Phe Gln Glu Asn Ile Leu Asp Arg Lys Lys
 1045 1050 1055
 Lys Lys

<210> 5424
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 5424
 Met Leu Ser Leu Asn Leu Pro Val Phe Asp Thr Lys Ile Ala Thr Arg
 1 5 10 15
 Asn Gly Lys Asn Val Ile Phe Asp Val Ile Arg Arg Arg Tyr Val Ala
 20 25 30
 Leu Thr Pro Glu Glu Trp Val Arg Gln His Phe Val His Phe Leu Ile
 35 40 45
 Val His Lys Gly Tyr Pro Ser Ser Leu Met Ala Asn Glu Val Leu Leu
 50 55 60
 Asn Leu Asn Gly Thr Lys Lys Arg Cys Asp Thr Val Leu Tyr Lys Arg
 65 70 75 80
 Asp Leu Ser Ala Arg Met Ile Val Glu Tyr Lys Ala Pro His Ile Glu
 85 90 95
 Ile Thr Gln Ala Val Phe Asp Gln Ile Thr Arg Tyr Asn Met Val Leu
 100 105 110
 Lys Val Asp Tyr Leu Val Val Ser Asn Gly Met Gln His Tyr Cys Cys
 115 120 125
 Arg Met Asp Tyr Asp Thr Gln Ser Tyr Ser Phe Leu Ser Asp Ile Pro
 130 135 140
 Asp Tyr Asp Ala Leu
 145

<210> 5425
 <211> 141
 <212> PRT
 <213> B.fragilis

<400> 5425
 Arg Leu Lys Pro Met Lys Ala Phe Leu Pro Leu Leu Leu Ser Phe Phe
 1 5 10 15
 Phe Ile Ile Ser Cys Gln Gln His Lys Glu Ala Thr Ile Ser Pro Ile
 20 25 30
 Asp Glu Glu Asp Glu Leu Gln Glu Glu Ala Asp Ser Leu Pro Arg Ala
 35 40 45
 Thr Ala Ile Phe Trp Leu Asp Lys Tyr His Met Lys Glu Leu Lys Lys
 50 55 60
 Asp Asp Val Leu Thr Phe Arg Thr Ala Lys Ala Lys Val Ile Ile Arg
 65 70 75 80
 Asn Asp Gly Thr Ile Glu Leu Leu Ser Phe Val Glu Gln Gln Pro Gly
 85 90 95
 Asn Ala Gln Arg Tyr Ile Arg Tyr Arg Leu Lys Asp Phe Lys Val Lys
 100 105 110
 Lys Ile Leu Met Asp Asn Gly Tyr Ile Asn Pro Gly Glu Gln Tyr Val

115	120	125
Gln Leu Arg Tyr Ile Pro Ala Leu Ala Arg Arg Val Lys		
130	135	140

<210> 5426

<211> 353

<212> PRT

<213> B.fragilis

<400> 5426

Met Met Glu Pro Thr Cys Met Ser Glu Asn Lys Lys Lys Ile Ile Phe		
1	5	10 15
Ile Val Asn Pro Ile Ser Gly Thr Gln Ser Lys Glu Leu Val Leu Ser		
	20	25 30
Leu Leu Asp Glu Lys Ile Asp Lys Glu Met Tyr Thr Trp Glu Ile Val		
	35	40 45
Tyr Thr Glu Arg Ala Gly His Ala Ile Glu Ile Ala Ala Asp Ala Ala		
	50	55 60
Asp Lys Asn Thr Asp Ile Val Val Ala Val Gly Gly Asp Gly Thr Ile		
65	70	75 80
Asn Glu Ile Ala Arg Ser Leu Val His Thr Asn Thr Ala Leu Gly Ile		
	85	90 95
Ile Pro Cys Gly Ser Gly Asn Gly Leu Ala Arg His Leu Gln Ile Ser		
	100	105 110
Met Asp Pro Arg Lys Ala Leu Glu Ile Leu Asn Asp Gly Ile Ile Asp		
	115	120 125
Ile Ile Asp Tyr Gly Lys Ile Asn Gly Thr Asp Phe Phe Cys Thr Cys		
	130	135 140
Gly Val Gly Phe Asp Ala Phe Val Ser Leu Lys Phe Ala Asn Ala Gly		
145	150	155 160
Lys Arg Gly Leu Leu Thr Tyr Leu Glu Lys Thr Leu Gln Glu Ser Leu		
	165	170 175
Lys Tyr Gln Pro Glu Thr Tyr Glu Leu Glu Thr Glu Asp Gly Thr Ser		
	180	185 190
Lys Tyr Lys Ala Phe Leu Ile Ala Cys Gly Asn Ala Ser Gln Tyr Gly		
	195	200 205
Asn Asn Ala Tyr Ile Ala Pro Gln Ala Thr Leu Thr Asp Gly Leu Leu		
	210	215 220
Asp Val Thr Ile Leu Glu Pro Phe Thr Val Leu Asp Val Pro Ala Leu		
225	230	235 240
Ala Phe Gln Leu Phe Asn Lys Thr Ile Asp Gln Asn Ser Arg Ile Lys		
	245	250 255
Thr Phe Arg Cys Lys Lys Leu Cys Ile His Arg Ser Ser Pro Gly Val		
	260	265 270
Val His Phe Asp Gly Asp Pro Met Gln Ala Asp Glu Asp Ile Lys Ile		
	275	280 285
Glu Leu Ile Gln Lys Gly Leu Arg Val Val Val Pro Gly Asp Lys Lys		
	290	295 300
Lys Asp Asn Pro Asn Val Leu Gln Lys Ala Gln Glu Tyr Val Asn Gly		
305	310	315 320
Ile Lys Leu Ile Asn Glu Ala Ile Val Glu Asp Ile Ala His Lys Asn		
	325	330 335
Lys Val Ile Leu Lys Lys Asn Lys Gln Leu Ile Gln Lys Leu Thr Lys		
	340	345 350
Lys		

<210> 5427

<211> 316

<212> PRT

<213> B.fragilis

<400> 5427

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Met Ile Met Pro Lys Asn Tyr Thr Leu Gln Asn Ala Ser Asn Leu Gly
1      5      10      15
Trp Leu Phe Tyr Lys Asp Tyr Tyr Arg Gln Glu Pro Asn Val Asp Phe
      20      25      30
Ile Ser Thr Gln Gly Lys Glu Ser Asp Thr Thr Ala Asp Phe Phe Arg
      35      40      45
Lys Thr Asn Gln Arg Ile Thr Ala Tyr Gln Leu Asn Ser Glu Ser Pro
      50      55      60
Leu Val Ala Ala Phe Asn Asn His Phe Gly Thr Pro Leu Gln Leu Lys
      65      70      75      80
Thr Ile Tyr Pro Gly Leu Ile Thr Gly Ser Gly Leu Pro His Gln Thr
      85      90      95
Gly Ser Lys Gly Glu Phe Lys Leu Gly Phe Gln Phe Asp Tyr Thr Thr
      100     105     110
Gly Leu Pro Tyr Ile Pro Gly Ser Ser Ile Lys Gly Thr Leu Arg Ser
      115     120     125
Met Phe Pro Phe Ser Leu Lys Asp Lys Gly Ser Thr Lys Arg Ile Leu
      130     135     140
Pro Glu Tyr Arg Lys Glu Arg Met Glu Tyr Ile Arg Asp Leu Ile Ile
      145     150     155     160
Glu Val Thr Asn Ile Asn Glu Ile Ser Asp Thr Glu Ile Gln Ala Leu
      165     170     175
Glu Tyr Ala Ile Phe Thr Asn Ser Thr Pro Ser Gly Lys Thr Ile Glu
      180     185     190
Phe Ser Leu Glu Glu Lys Asp Val Phe Tyr Asp Ala Phe Val Ala Asp
      195     200     205
Ser Lys Asp Gly Val Met Leu Ser Asp Asp Tyr Ile Thr Pro His Gly
      210     215     220
Glu Asn Pro Leu Lys Asp Pro Lys Pro Ile Leu Phe Leu Lys Ile Arg
      225     230     235     240
Pro Asp Val Thr Ile Asn Phe Tyr Phe Lys Leu Cys Thr Thr His Leu
      245     250     255
Tyr Lys Glu Lys Val Cys Ser Ser Lys Gln Ile Glu Glu Ile Lys Lys
      260     265     270
Gln Asn Asp Phe Ser Ser Ser Asp Tyr Lys Met Ile Thr Ala His Gln
      275     280     285
Lys Arg Asn Leu Phe Glu Lys Ile Leu Leu Cys Ile Gly Ile Gly Ala
      290     295     300
Lys Thr Asn Ile Gly Tyr Gly Gln Leu Lys Lys Leu
      305     310     315

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<210> 5428

<211> 93

<212> PRT

<213> B.fragilis

<400> 5428

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Gly Glu Lys Phe Arg His Asn Gly Leu Asp Lys Ile Val Met Asp Phe
1      5      10      15
Gly Ile Ala Phe Asn Ile Gly Lys Met Ile Asn Lys Gln Glu Lys Lys
      20      25      30
Lys Arg Gly Arg Thr Asn Leu Leu Val Thr Ile Leu Ile Ser Cys Gly
      35      40      45
Ile Ala Tyr Gln Lys Tyr Thr Lys Ala Ile Ile Leu Arg Gly Cys Pro
      50      55      60

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Lys Ser Lys Val Pro Pro Lys Ser Arg Ile Ala Pro Phe Thr Ile Val
 65 70 75 80
 Tyr Phe Gly Glu Lys Pro His Ile Thr Val Val Lys Asn
 85 90

<210> 5429

<211> 134

<212> PRT

<213> B.fragilis

<400> 5429

Leu Ile Asp Thr Ile Arg Asn Met His Ile Ser His Ile Ala Ile Trp
 1 5 10 15
 Thr Thr Arg Leu Glu Glu Leu Arg Asn Phe Tyr Ile Thr Tyr Phe Asn
 20 25 30
 Gly Thr Ser Asn Glu Lys Tyr Ile Asn Pro Lys Lys Gly Phe Glu Ser
 35 40 45
 Tyr Phe Ile Ser Phe Asp Gln Gly Phe Ala Ser Leu Glu Ile Met Gln
 50 55 60
 Arg Glu Asp Ile Thr Thr Pro Ala Leu Lys Asp Cys Leu Gly Leu Ala
 65 70 75 80
 His Phe Ser Phe Ser Val Gly Ser Lys Glu Ala Val Leu Glu Leu Thr
 85 90 95
 Glu Gln Leu Arg Lys Asp Gly Phe Val Ile Glu Ser Glu Pro Arg Thr
 100 105 110
 Thr Gly Asp Gly Tyr Phe Glu Ser Ala Ile Leu Asp Pro Glu Gly Asn
 115 120 125
 Ile Val Glu Ile Thr Ile
 130

<210> 5430

<211> 236

<212> PRT

<213> B.fragilis

<400> 5430

Leu Arg Val Thr Leu Asp Arg Val Ile Glu Asp Lys Glu Leu Gly Arg
 1 5 10 15
 Leu Val Val Arg Asp Asn Val Arg Ala Lys Arg Leu Val Phe Arg Thr
 20 25 30
 Lys Ala Asp Ala Ile Tyr Ile Ser Ile Pro Leu Gly Val Thr Met Arg
 35 40 45
 Glu Val Lys Glu Ala Ile Glu Lys Leu Arg Pro Arg Leu Leu Asp Ser
 50 55 60
 Arg Gln Lys Leu Val Arg Pro Leu Ile Asp Leu Asn Tyr Arg Ile Glu
 65 70 75 80
 Thr Glu Tyr Phe Lys Leu Ser Leu Val Ser Gly Lys Arg Glu Arg Phe
 85 90 95
 Leu Ala His Ser Glu Leu Gly Glu Met Arg Ile Ile Cys Pro Pro Thr
 100 105 110
 Ala Asp Phe Thr Asp Ser Asn Leu Gln Asp Trp Leu Arg Lys Val Ile
 115 120 125
 Glu Glu Ala Leu Arg Arg Asn Ala Lys Ile Ile Leu Pro Pro Arg Leu
 130 135 140
 Tyr Met Leu Ser Glu Lys His Arg Leu Pro Tyr Glu Ser Val Gln Ile
 145 150 155 160
 Asn Ser Ser Arg Gly Arg Trp Gly Ser Cys Ser Ser Arg Lys Lys Ile
 165 170 175
 Asn Leu Ser Tyr Phe Leu Val Leu Leu Pro Lys His Leu Ile Asp Tyr


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      180              185              190
Val Leu Leu His Glu Leu Cys His Thr Cys Glu Met Asn His Gly Asp
      195              200              205
Arg Phe Trp Asp Leu Leu Asn Gly Leu Thr Asp Gly Lys Ala Leu Glu
      210              215              220
Leu Arg Glu Glu Leu Lys Arg Tyr Lys Thr Glu Ile
      225              230              235

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<210> 5431
 <211> 82
 <212> PRT
 <213> B.fragilis

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<400> 5431
Pro Leu Lys Thr Asn Arg Ser Met Arg Asn Phe Phe Val Ser Ala Phe
1              5              10              15
Leu Leu Leu Val Gly Ile Ala Val Met Thr Val Cys Arg Met Asn Asn
      20              25              30
Lys Gln Cys Leu Ser Glu Leu Ala Leu Val Asn Val Glu Ala Leu Ala
      35              40              45
Thr Gly Glu Gly Asp Val Pro Thr Ser Cys Tyr Gly Ser Gly Asn Val
      50              55              60
Asp Cys Pro Ile Ser Asp Ser Lys Val Ser Tyr Val Met Asn Gly Arg
      65              70              75              80
Ser Phe

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<210> 5432
 <211> 501
 <212> PRT
 <213> B.fragilis

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<400> 5432
His Ser Arg Thr Asp Lys Thr Ile Arg Ile Met Ile Tyr Ser Tyr His
1              5              10              15
Ile Phe Tyr Phe Pro Phe Lys Trp Glu Ile Met Gly Leu Glu Asn Gln
      20              25              30
Ala Phe Ser Asp Gln Val Asn Leu Asp Asn Ile Gln Tyr Asn Arg Asn
      35              40              45
Ser Tyr Trp Glu Arg Ser Gln Lys Pro Asp Pro Gly Glu Glu Glu Ser
      50              55              60
Leu Tyr Asn Glu Lys Asn Tyr Tyr Tyr Thr Phe Val His Asn Ile Leu
      65              70              75              80
Tyr Asp Glu Glu His Ser Pro Leu Asn Leu Ile His His Phe Glu Arg
      85              90              95
Lys Glu Pro Lys Leu Ser Asn His Ile Tyr Tyr Tyr Ile Lys Lys Lys
      100              105              110
Gly Arg Asn Asn Pro Tyr Lys Leu Ile Val Asp Ala Met Asn Ile Asn
      115              120              125
Leu Tyr Ala Thr Gly Val Gly Phe Leu Ser Phe Tyr Leu Lys Asn Glu
      130              135              140
Asp Cys Thr Gln Asn Ser Pro Glu Asp Ile Leu Ala Ile Asn Gln Tyr
      145              150              155              160
Gly Arg Arg Ile Met Pro Pro Phe Phe Asn Asp Thr Arg Leu Arg Asn
      165              170              175
Glu Ile Ser Glu Tyr Ile Arg Ile Glu Gly Leu Asn Gln Thr Val Tyr
      180              185              190
Phe Glu Asp Phe Lys Ser Tyr Thr Pro Tyr Asp Ser Trp Gln Pro Ser
      195              200              205

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Ser Ser Ile Lys Lys Leu Ile Cys Glu Leu Val Thr Asn Leu Ser Ile
210                215                220
Asp Pro Ile Ile Asp Asp Arg Met Phe Val Ala Thr Trp Tyr Lys Asn
225                230                235                240
Asn Gln Leu Ser Gln Gln Phe Thr Asn Asn Ala Lys Ala Tyr Phe Asp
                245                250                255
Ser Gln Asp Pro Phe Ser Asp Tyr Trp Tyr Arg Phe Leu Phe Ile Asp
                260                265                270
Gly Ser Asn Ala Thr Cys Gln Asn Glu Lys Met Lys Lys Glu Leu Leu
                275                280                285
Glu Glu His Thr Tyr Tyr Arg Trp Gln Gln Trp Ser Ser Leu Tyr Gly
290                295                300
Ile Ser Lys Tyr Ser Leu Val Tyr Leu Thr Asn Asn Glu Val Pro Asp
305                310                315                320
Tyr Leu Ile Glu Tyr Phe Gln Thr Ile Tyr Ala Arg Met Ala Glu Leu
                325                330                335
Val Leu Val Gln Arg Ala Ser Met Leu Arg Phe Ser Gly Glu Ile Thr
                340                345                350
Lys Val Ser Gln Leu Ser Asn Gln Asp Val Glu Ala Val Ser Lys Arg
                355                360                365
Val Ser Ser Leu Tyr Lys Glu Tyr Ile Arg Phe Val Asn Gln Ile Tyr
                370                375                380
Phe Arg Glu Ile Thr Ala Gln Asp Gln Gly Ile Glu Met Tyr Asn Lys
385                390                395                400
Leu His Ser Cys Leu Gln Met Glu Ser Tyr Ile Lys Asp Leu Asp Gly
                405                410                415
Glu Ile Glu Glu Leu His Gln Tyr Ile Ser Leu Met Glu Asp Arg Glu
                420                425                430
Arg Asn Lys Lys Ala Ser Leu Leu Asn Asp Ile Ala Thr Leu Phe Leu
                435                440                445
Pro Ile Thr Val Ile Thr Gly Phe Trp Gly Met Asn Gln Ile Ser Glu
                450                455                460
Val Met Glu Glu Asn Gly Glu Leu Ser Thr Gly Phe Ile Ile Gln Ser
465                470                475                480
Leu Leu Leu Ile Ile Gly Thr Leu Cys Ala Ile Cys Ile Ile Tyr Lys
                485                490                495
Arg Lys Arg Lys Leu
                500

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<210> 5433

<211> 265

<212> PRT

<213> B.fragilis

<400> 5433

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Tyr Met Gly Thr Ile Asp Ile Ser Tyr Phe Asn Leu Leu Ile Gly Leu
1                5                10                15
Leu Leu Leu Val Ile Pro Leu Phe Tyr Leu Trp Lys Phe Lys Thr Gly
                20                25                30
Leu Leu Lys Ala Thr Leu Ile Gly Thr Ala Arg Met Ile Val Gln Leu
                35                40                45
Phe Leu Ile Gly Met Tyr Leu Lys Tyr Leu Phe Leu Trp Asn Asn Pro
50                55                60
Trp Ile Asn Phe Leu Trp Val Ile Ile Met Ile Phe Val Ala Gly Gln
65                70                75                80
Thr Ala Leu Val Arg Thr Gly Leu Lys Arg Glu Ile Leu Leu Ile Pro
                85                90                95
Ile Ser Val Gly Phe Leu Cys Ser Val Val Leu Val Gly Met Tyr Phe
                100                105                110

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Ile Gly Ile Val Leu Gln Leu Asp Asn Val Phe Ser Ala Gln Tyr Phe
 115 120 125
 Ile Pro Ile Phe Gly Ile Leu Met Gly Asn Met Leu Ser Ser Asn Val
 130 135 140
 Ile Ala Leu Asn Thr Tyr Tyr Ser Gly Leu Lys Arg Glu Gln Gln Leu
 145 150 155 160
 Tyr Cys Tyr Leu Leu Gly Asn Gly Ala Thr Arg Gln Glu Ala Gln Ala
 165 170 175
 Pro Phe Ile Arg Glu Ala Ile Ile Lys Ser Phe Ser Pro Leu Ile Ala
 180 185 190
 Asn Ile Ala Val Met Gly Leu Val Ala Leu Pro Gly Thr Met Ile Gly
 195 200 205
 Gln Ile Leu Gly Gly Ser Ser Pro Asn Val Ala Ile Lys Tyr Gln Met
 210 215 220
 Met Ile Met Val Ile Thr Phe Thr Ala Ser Met Leu Ser Leu Met Ile
 225 230 235 240
 Thr Ile Ser Leu Ala Ser Arg Lys Ser Phe Asp Glu Tyr Gly Arg Ile
 245 250 255
 Leu Gln Val Thr Lys Glu Ser Gln Lys
 260 265

<210> 5434

<211> 667

<212> PRT

<213> B.fragilis

<400> 5434

Glu Tyr Met Thr Val Lys Glu Lys Ile Glu Gln Leu Arg Leu Gln Leu
 1 5 10 15
 His Gln His Asn Tyr Asn Tyr Tyr Val Leu Asn Ala Pro Glu Ile Ser
 20 25 30
 Asp Lys Glu Phe Asp Asp Leu Met Arg Glu Leu Gln Asp Leu Glu Gln
 35 40 45
 Glu His Pro Glu Tyr Lys Asp Glu Asn Ser Pro Thr Met Arg Val Gly
 50 55 60
 Ser Asp Ile Asn Lys Asn Phe Thr Gln Val Ala His Lys Tyr Pro Met
 65 70 75 80
 Leu Ser Leu Ser Asn Thr Tyr Ser Glu Asn Glu Val Thr Asp Phe Tyr
 85 90 95
 Asp Arg Val Arg Lys Ala Leu Asn Glu Asp Phe Glu Ile Cys Cys Glu
 100 105 110
 Met Lys Tyr Asp Gly Thr Ser Ile Ser Leu Thr Tyr Glu Asn Gly Lys
 115 120 125
 Leu Ile Arg Ala Val Thr Arg Gly Asp Gly Glu Lys Gly Asp Asp Val
 130 135 140
 Thr Asp Asn Val Lys Thr Ile Arg Ser Ile Pro Leu Val Leu His Gly
 145 150 155 160
 Asp Asn Tyr Pro Glu Val Phe Glu Ile Arg Gly Glu Ile Leu Met Pro
 165 170 175
 Trp Glu Val Phe Glu Ala Leu Asn Arg Glu Lys Glu Ala Arg Glu Glu
 180 185 190
 Pro Leu Phe Ala Asn Pro Arg Asn Ala Ala Ser Gly Thr Leu Lys Leu
 195 200 205
 Gln Asn Ser Ala Ile Val Ala Ser Arg Lys Leu Asp Ala Tyr Leu Tyr
 210 215 220
 Tyr Leu Leu Gly Asp Asn Leu Pro Thr Asp Gly His Tyr Glu Asn Leu
 225 230 235 240
 Gln Glu Ala Ala Lys Trp Gly Phe Lys Ile Ser Pro Leu Met Arg Lys
 245 250 255

Cys Gln Thr Leu Gln Glu Val Phe Asp Phe Ile Asn Tyr Trp Asp Val
 260 265 270
 Glu Arg Lys Asn Leu Asn Val Ala Thr Asp Gly Ile Val Leu Lys Val
 275 280 285
 Asn Ser Leu Lys Gln Gln Arg Asn Leu Gly Phe Thr Ala Lys Ser Pro
 290 295 300
 Arg Trp Ala Ile Ala Tyr Lys Phe Gln Ala Glu Arg Ala Leu Thr Arg
 305 310 315 320
 Leu Asn Met Val Thr Tyr Gln Val Gly Arg Thr Gly Ala Val Thr Pro
 325 330 335
 Val Ala Asn Leu Asp Pro Val Gln Leu Ser Gly Thr Val Val Lys Arg
 340 345 350
 Ala Ser Leu His Asn Ala Asp Ile Ile Glu Gly Leu Asp Leu His Ile
 355 360 365
 Gly Asp Met Val Tyr Val Glu Lys Gly Gly Glu Ile Ile Pro Lys Ile
 370 375 380
 Thr Gly Val Asp Thr Ser Ala Arg Phe Met Ile Gly Glu Lys Val Lys
 385 390 395 400
 Phe Ile Thr His Cys Pro Glu Cys Gly Ser Lys Leu Ile Arg Tyr Glu
 405 410 415
 Gly Glu Ala Ala His Tyr Cys Pro Asn Glu Thr Ala Cys Pro Pro Gln
 420 425 430
 Ile Lys Gly Lys Ile Glu His Phe Ile Ser Arg Lys Ala Met Asn Ile
 435 440 445
 Asp Gly Leu Gly Pro Glu Thr Ile Asp Met Phe Tyr Arg Leu Gly Leu
 450 455 460
 Ile Arg Asp Thr Ala Asp Leu Tyr Gln Leu Thr Thr Asp Asp Ile Arg
 465 470 475 480
 Gly Leu Asp Arg Met Gly Asp Lys Ser Ala Glu Asn Ile Ile Lys Gly
 485 490 495
 Ile Met Gln Ser Lys Glu Val Pro Phe Glu Arg Val Ile Phe Ala Leu
 500 505 510
 Gly Ile Arg Phe Val Gly Glu Thr Val Ala Lys Lys Ile Ala Lys Ser
 515 520 525
 Phe Lys Asp Ile Glu Glu Leu Glu Asn Ala Asp Leu Glu Thr Leu Ile
 530 535 540
 Asn Ile Asp Glu Ile Gly Glu Lys Ile Ala Arg Ser Ile Leu Asn Tyr
 545 550 555 560
 Phe Ala Asn Glu Ser Asn Arg Lys Leu Val Asp Arg Leu Lys Thr Ala
 565 570 575
 Gly Leu Gln Leu Tyr Arg Pro Glu Glu Asp Leu Ser Gly His Thr Asp
 580 585 590
 Lys Leu Ala Gly Gln Ser Ile Val Ile Ser Gly Val Phe Thr His His
 595 600 605
 Ser Arg Asp Glu Tyr Lys Asp Leu Ile Glu Lys His Gly Gly Lys Asn
 610 615 620
 Val Gly Ser Ile Ser Ser Lys Thr Ser Phe Ile Leu Ala Gly Asp Asn
 625 630 635 640
 Met Gly Pro Ala Lys Leu Glu Lys Ala Ser Lys Leu Gly Ile Lys Ile
 645 650 655
 Met Asn Glu Glu Glu Phe Leu Lys Leu Ile Ser
 660 665

<210> 5435

<211> 202

<212> PRT

<213> B.fragilis

<400> 5435

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Ile Tyr Leu Ala Lys Leu Val Lys Ile His Asn Met Cys Gly Ile Ser
1          5          10          15
Phe Ile Phe Val Ser Leu Ile Asn Glu Arg Asp Met Ile Leu Asn Glu
20          25          30
Arg Asp Ser Arg His Glu His Val Leu Asn Val Ala Arg Gln Met Met
35          40          45
Thr Ala Ala Arg Thr Ala Pro Lys Gly Lys Gly Ile Asp Ile Ile Glu
50          55          60
Thr Ala Ile Val Thr Gly Glu Glu Ile Gln Gln Leu Ser Asp Thr Leu
65          70          75          80
Lys Ala Met Phe Glu Glu Phe Gly Met Lys Phe Phe Leu Arg Asp Ala
85          90          95
Asp Asn Ile Leu Gln Ala Glu Cys Ile Leu Leu Ile Gly Thr Arg Glu
100         105         110
Gln Ala Gln Gly Leu Asn Cys Gly His Cys Gly Tyr Ala Thr Cys Ser
115         120         125
Gly Arg Ser Glu Gly Val Pro Cys Ala Leu Asn Ser Ile Asp Val Gly
130         135         140
Ile Ala Ile Gly Ser Ala Cys Ala Thr Ala Ala Asp Leu Arg Val Asp
145         150         155         160
Thr Arg Val Met Phe Ser Ala Gly Leu Ala Ala Gln Arg Leu Glu Trp
165         170         175
Leu Lys Gly Cys Arg Gln Val Met Ala Ile Pro Val Ser Ala Ser Ser
180         185         190
Lys Asn Pro Phe Phe Asp Arg Lys Pro Lys
195         200

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<210> 5436 .
<211> 604
<212> PRT
<213> B.fragilis

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<400> 5436
Asn Asn Asn Ala Met Lys Tyr Ile Ala Ile Thr Leu Gly Pro Ile Thr
1          5          10          15
Arg Thr Ile Glu Met Ala Glu Ser Thr Lys Glu Leu Trp Ala Ala Ser
20          25          30
Tyr Phe Phe Ser Tyr Leu Ala Lys Lys Ile Val Glu Pro Phe Val Lys
35          40          45
Lys Asn Arg Thr Phe Gln Leu Pro Leu Ile Asn Glu Glu Met Gln Lys
50          55          60
Pro His Cys Gly Ala Gly Leu Phe Pro Asp Arg Tyr Ile Phe Lys Ser
65          70          75          80
Glu Pro Glu Asp Leu Glu Leu Leu Lys Gln His Ser Asp Gln Val Leu
85          90          95
Ile Glu Ile Ala Gly His Ile Ala Ser Pro Ser Leu Pro Gly Thr Ala
100         105         110
Lys Asp Val Ser Gln Ile Tyr His Tyr Leu Lys Ser Tyr Ile Lys Ile
115         120         125
Tyr Phe Ile Glu Arg Thr Leu Glu Ser Asp Asp Pro His Val Val Ile
130         135         140
Pro Ala Cys Glu Lys Tyr Leu Asn Ile Ile Glu Asn Gln Glu Thr Phe
145         150         155         160
Pro Glu Gln Glu Glu Thr Met Ile Ser His Gln Lys Ser Asp Phe Leu
165         170         175
Lys Phe Leu Ile Thr Asn Val Asn Gly Lys Ile Tyr Arg Lys Asp Lys
180         185         190
Asn Ser Ile Pro Arg Phe Thr Gly Ser Phe Leu Thr Arg Asp Ala Phe
195         200         205

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Gly Asp Met Asn Gly Glu Arg Leu Phe Glu Ser Ile Leu Glu Ile Ser
 210 215 220
 Ala Ser Glu Leu Asn Ile Asn Ile Gln Gln Lys Ala Leu Glu Val Ile
 225 230 235 240
 Thr Ala Asn Glu Lys Asn Lys Gly Glu Lys Tyr Ser Asp Gln Ile Trp
 245 250 255
 Asp Ala Glu Glu Ile Ile Leu Asn Asp Asn Lys Ala Gln Leu Arg Pro
 260 265 270
 Tyr His Lys Tyr Ile Ala Ile Ile Lys Ser Asp Gly Asp Ser Met Gly
 275 280 285
 Glu Thr Ile Lys Ser Met Gly Ala Tyr Asn Ile Pro Ile Thr Gln Leu
 290 295 300
 Ser Lys Ala Leu Leu Ser Phe Asn Ile Glu Ser Ile Asn Glu Ile Val
 305 310 315 320
 Ala Tyr Gly Gly Lys Pro Ile Phe Ile Gly Gly Asp Asp Leu Leu Cys
 325 330 335
 Phe Ala Pro Val Cys Cys Asn Gly Asn Asn Val Phe Asn Leu Val Glu
 340 345 350
 Lys Leu Ser Thr Cys Phe Asp Gln Cys Ile Asn Gln His Leu Gln Gln
 355 360 365
 Tyr Ile Asn Ala Cys Ser Glu Ala Gln Arg Pro Leu Pro Ser Leu Ser
 370 375 380
 Phe Gly Ile Ser Ile Thr Tyr His Lys Tyr Pro Met Phe Glu Ala Leu
 385 390 395 400
 His Thr Thr Asp Tyr Leu Leu Glu Met Val Ala Lys Asp Asn Leu Phe
 405 410 415
 Lys Tyr Thr Leu Ser Asn Lys Asn Ile Leu Asn Glu Asn Met Lys Arg
 420 425 430
 Phe Ile Leu Lys Asn Lys Leu Ala Phe Ser Leu Gln Lys His Ser Gly
 435 440 445
 Gln Ile Tyr His Thr Ala Met Ser Lys Lys Gly Lys Ser Tyr Val Lys
 450 455 460
 Phe Asn Met Leu Leu Gln Lys Tyr Ile Leu Lys Asn Lys Asp Met Ser
 465 470 475 480
 Lys Thr Gln Glu Ser Glu Lys Phe Leu Ser Ser Val Ile Gln Met Ile
 485 490 495
 Arg Ala His Ala Glu Ile Leu Gln Ile Ile Leu Gln Asn Glu Asp Lys
 500 505 510
 Arg Thr Glu Met Leu Lys Asn Tyr Phe Asp Asn Asn Phe Asn Glu Ser
 515 520 525
 Cys His Leu Gly Tyr Thr Gly Leu Phe Glu Asp Ile Gln Thr Leu Leu
 530 535 540
 Cys Leu Arg Tyr Gln Glu Asn Ile Gln Asp Tyr Gln Asn Arg Asn Glu
 545 550 555 560
 Ile Ile Gln Gln Asn Thr Ile Leu Thr Ser Asp Glu Lys Glu Ile Leu
 565 570 575
 Ile Val Ser Pro Ala Met Asp Ala Ile His Thr Ile Phe Thr Ala Leu
 580 585 590
 Gln Phe Ile His Phe Ile Asn Tyr Asn Lys Asp Glu
 595 600

<210> 5437
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 5437
 Thr Ile Met Ala Asp Leu Ser Val Asn Ile Gly Lys Leu Gln Met Lys
 1 5 10 15

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Asn Pro Val Met Thr Ala Ser Gly Thr Phe Gly Tyr Gly Glu Glu Phe
    20                      25                      30
Ala Asp Phe Ile Asp Ile Thr Arg Ile Gly Gly Ile Ile Val Lys Gly
    35                      40                      45
Thr Thr Leu His Lys Arg Glu Gly Asn Pro Tyr Pro Arg Met Ala Glu
    50                      55                      60
Thr Pro Ser Gly Met Leu Asn Ala Val Gly Leu Gln Asn Lys Gly Val
    65                      70                      75                      80
Glu Tyr Phe Ser Asn His Ile Tyr Pro Arg Ile Lys Asp Ile Gln Thr
    85                      90                      95
His Met Ile Val Asn Val Ser Gly Ser Ala Ile Glu Asp Tyr Val Lys
    100                     105                     110
Thr Ala Glu Ile Ile Asn Glu Leu Asp Lys Ile Pro Ala Ile Glu Leu
    115                     120                     125
Asn Ile Ser Cys Pro Asn Val Lys Gln Gly Gly Met Ala Phe Gly Val
    130                     135                     140
Thr Thr Lys Gly Val Ser Glu Val Val Gln Ala Val Arg Ser Ala Tyr
    145                     150                     155                     160
Lys Lys Thr Leu Ile Val Lys Leu Ser Pro Asn Val Thr Asp Ile Ala
    165                     170                     175
Glu Met Ala Arg Ala Ala Glu Ala Asn Gly Ala Asp Ser Val Ser Leu
    180                     185                     190
Ile Asn Thr Leu Leu Gly Met Ala Ile Asp Ala Glu Arg Lys Arg Pro
    195                     200                     205
Ile Leu Ser Thr Val Thr Gly Gly Met Ser Gly Ala Ala Val Lys Pro
    210                     215                     220
Ile Ala Leu Arg Met Val Trp Gln Val Ala Lys Ala Val Asn Ile Pro
    225                     230                     235                     240
Val Ile Gly Leu Gly Gly Ile Met Asn Trp Lys Asp Ala Val Glu Phe
    245                     250                     255
Met Leu Ala Gly Ala Ser Ala Ile Gln Ile Gly Thr Ala Asn Phe Ile
    260                     265                     270
Asp Pro Ala Ile Thr Ile Lys Val Ile Asp Gly Ile Asn Asp Tyr Leu
    275                     280                     285
Glu Arg His Gly Cys Lys Ser Val Pro Glu Ile Ile Gly Ala Leu Glu
    290                     295                     300
Val
305

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<210> 5438
<211> 431
<212> PRT
<213> B.fragilis

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<400> 5438
Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1      5      10      15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
20     25     30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
35     40     45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
50     55     60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65     70     75     80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
85     90     95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
100    105    110

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Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
115 120 125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
130 135 140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145 150 155 160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
165 170 175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
180 185 190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
195 200 205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
210 215 220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225 230 235 240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
245 250 255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
260 265 270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
275 280 285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
290 295 300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305 310 315 320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
325 330 335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
340 345 350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
355 360 365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
370 375 380
Lys Lys Thr Ser Arg Ile Lys Ser Phe Val Phe Arg Phe Ile Ser Val
385 390 395 400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
405 410 415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
420 425 430

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<210> 5439

<211> 761

<212> PRT

<213> B.fragilis

<400> 5439

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Ile Tyr Asn Leu Asn Met Pro Asp Tyr Tyr His Ser Ile Thr Thr Leu
1 5 10 15
His Ala Leu Gln Asn Ala Trp Arg Ala Val Arg Ala Lys Asn Ala Ala
20 25 30
Gly Gly Ile Asp Gly Phe Thr Leu Ser His Phe Glu Lys Arg Leu Asn
35 40 45
Asp Asn Leu Ile Glu Leu Gln His Glu Leu Ile Ser Gln Thr Trp Asn
50 55 60
Pro Glu Pro Tyr Leu Arg Ile Glu Ile Thr Lys Asn Glu Thr Glu Lys
65 70 75 80
Arg Lys Leu Gly Leu Leu Cys Ile Lys Asp Lys Ile Val Gln Gln Ala
85 90 95

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Ile Lys Thr Ala Ile Glu Pro Gln Leu Glu Lys Thr Phe Leu Asn Leu
 100 105 110
 Ser Tyr Gly Tyr Arg Pro Asn Lys Gly Pro Glu Arg Ala Ile Lys Arg
 115 120 125
 Val Val His Asp Leu Lys Lys Leu Lys Ser Gly Tyr Val Ala Lys Leu
 130 135 140
 Asp Ile Asp Asn Tyr Phe Asp Thr Ile Asn His Glu Arg Leu Phe Thr
 145 150 155 160
 Arg Leu Ala Asn Trp Leu Lys Asp Asp Glu Thr Leu Arg Leu Ile Arg
 165 170 175
 Leu Cys Ile Gln Thr Gly Ile Val Thr Pro Gln Leu Gln Trp Gln Glu
 180 185 190
 Ile Asn Lys Gly Val Pro Gln Gly Ala Ile Leu Ser Pro Leu Leu Ala
 195 200 205
 Asn Phe Tyr Leu His Pro Phe Asp Gln Phe Ala Ala Asn Lys Val Pro
 210 215 220
 Met Tyr Ile Arg Tyr Ala Asp Asp Phe Leu Ile Ala Thr Ser Thr Glu
 225 230 235 240
 Lys Gln Ile Lys Glu Ala Val Glu Leu Val Lys Glu Glu Leu Glu Ser
 245 250 255
 Gln Phe Tyr Leu Gln Leu Asn Thr Pro Ile Ile His Asn Phe His Asp
 260 265 270
 Gly Ile Glu Phe Leu Gly Ile Thr Ile Ser Asp Thr Gly Leu Ser Ile
 275 280 285
 Thr Glu Lys Lys Lys Lys Thr Leu Gln Glu Arg Ile Asn Ser Ile Lys
 290 295 300
 Phe Ile Lys Ser Ser Leu Ser Ser Gln Ser Lys Glu Thr Leu Gln Gly
 305 310 315 320
 Ile Lys Asn Tyr Tyr Ala Lys Leu Leu Pro Glu Ser Thr Leu Lys Glu
 325 330 335
 Leu Asp Cys Phe Leu Met Asn Arg Leu Asn Ala Leu Ile Ile Arg Asn
 340 345 350
 Gln Asn Ser Ile Asn Asn Lys Lys Glu Leu Val Ser Asn Leu Gln Lys
 355 360 365
 Ile Glu Phe Tyr Ser Glu Asn Ser Asn Lys Asn Lys Ser Gln Leu Ile
 370 375 380
 Gln Gln Leu Cys Ser Thr Tyr Ile Val His Ser Thr Lys Ser Lys Thr
 385 390 395 400
 Arg Leu Thr Ser Thr His Ile Asp Asn Thr Lys Leu Ile Thr Gln Lys
 405 410 415
 Lys Lys Glu Tyr Gln Lys Arg Glu Asn Glu Gly Ala Glu Leu Val Ile
 420 425 430
 Ser Ile Pro Gly Ser Tyr Ile Gly Ala Thr Tyr Lys Gly Ile Thr Val
 435 440 445
 Lys Leu Gln Gly Lys Ile Ile Asn Lys Pro Ser Pro Ala Leu Lys His
 450 455 460
 Ile Thr Val Val Gly Lys Gly Ile Ser Leu Ser Ser Asn Ala Ile Thr
 465 470 475 480
 Tyr Cys Met Asn His Lys Ile Pro Ile Asp Phe Phe Asp Gly Arg Gly
 485 490 495
 Lys Gln Tyr Gly Thr Val Leu Asn Pro Val Phe Leu Asp Val Thr Leu
 500 505 510
 Trp Asn Lys Gln Val Glu Leu Pro Leu Glu Gln Lys Ile Lys Leu Ala
 515 520 525
 Thr Gln Ile Ile Ile Gly Lys Leu Lys Asn Gln Leu Asn Leu Ile Lys
 530 535 540
 Tyr Tyr His Lys Tyr His Lys Asp Ile Leu Gly Gly Lys Leu Ser Glu
 545 550 555 560
 Lys Tyr Val Glu Val Val Leu Lys Ile Asp Lys Leu Ile Glu Lys Ala

565 570 575
 Lys Asn Tyr Ser Gln Arg Asn Glu Lys Tyr Thr Ala Glu Leu Met Ala
 580 585 590
 Ile Glu Ser Gln Ala Ala Ile Ala Tyr Trp Ser Tyr Ile Arg Val Leu
 595 600 605
 Thr Ala Asp Asp Gly Ile Asp Phe Ile Arg Arg Glu His Gln Gly Ala
 610 615 620
 Thr Asp Leu Leu Asn Ser Leu Leu Asn Tyr Gly Tyr Ala Ile Leu Tyr
 625 630 635 640
 Ala Arg Val Trp Lys Asn Ile Leu Ala Ala Lys Leu Asn Pro Ser Ile
 645 650 655
 Gly Val Leu His Ala Lys Gln Asp Gly Lys Pro Thr Leu Val Phe Asp
 660 665 670
 Val Val Glu Leu Phe Arg Ala Gln Met Val Asp Arg Val Val Ile Ser
 675 680 685
 Leu Ile Gln Lys Lys Val Ser Leu Lys Met His Asp Gly Leu Leu Asn
 690 695 700
 Glu Ser Ser Lys Arg Val Leu Ile Arg Tyr Ile Leu Glu Arg Leu Asn
 705 710 715 720
 Arg Tyr Glu Lys Tyr Arg Gly Glu Glu Ile Thr Phe Ser Gln Ile Ile
 725 730 735
 Leu Arg Gln Ala Gln Glu Ile Ala Leu Phe Ile Ser Gly Asp Asn Leu
 740 745 750
 Ile Phe Lys Pro Tyr Val Ala Lys Trp
 755 760

<210> 5440
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 5440
 Ser His Asn Phe Pro Phe Lys Trp Lys Ile Lys Tyr Val Ile Thr Ile
 1 5 10 15
 Tyr His Asn Ser Asn Ser Phe Ile Cys Ser Thr Met Leu Ser Ile Ser
 20 25 30
 Phe Val Val Arg Arg Leu Arg Thr Val Pro Ile Asn Pro Leu Ile Pro
 35 40 45
 Pro Pro Gln Lys Ile Leu Leu Ile Gly Val Tyr Arg Phe Asn Ile Phe
 50 55 60
 Trp Ile Glu Phe Ile Pro Phe Pro
 65 70

<210> 5441
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 5441
 Arg His Thr Tyr Ile Tyr Met Ala Lys Gln Glu Leu Thr Cys Asp Asp
 1 5 10 15
 Ile Leu Lys Glu Leu Arg Ala Lys Gln Tyr Arg Pro Ile Tyr Tyr Leu
 20 25 30
 Met Gly Glu Glu Ser Tyr Tyr Ile Asp Leu Ile Ala Asp Tyr Ile Thr
 35 40 45
 Asp Asn Val Leu Thr Asp Thr Glu Lys Glu Phe Asn Leu Thr Val Val
 50 55 60
 Tyr Gly Ala Asp Val Asp Val Ala Thr Val Ile Asn Ala Ala Lys Arg
 65 70 75 80

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Tyr Pro Met Met Ser Glu His Gln Val Val Ile Val Lys Glu Ala Gln
      85                      90                      95
Ala Ile Arg Asn Ile Glu Glu Leu Ser Tyr Tyr Leu Gln Lys Pro Leu
      100                      105                      110
Asn Ser Thr Ile Leu Val Val Cys His Lys His Gly Ala Leu Asp Arg
      115                      120                      125
Arg Lys Lys Leu Ala Ala Glu Ile Glu Lys Thr Gly Ile Leu Phe Glu
      130                      135                      140
Ser Lys Lys Ile Lys Glu Ala Gln Leu Pro Ala Phe Ile Ser Ser Tyr
      145                      150                      155                      160
Met Lys Arg Lys Gly Ile Asp Met Glu Pro Lys Ala Thr Ala Met Leu
      165                      170                      175
Ala Asp Phe Val Gly Thr Asp Leu Ser Arg Leu Thr Gly Glu Leu Glu
      180                      185                      190
Lys Leu Ile Ile Thr Leu Pro Gly Gly Gln Lys Arg Val Thr Pro Glu
      195                      200                      205
Gln Ile Glu Lys Asn Ile Gly Ile Ser Lys Asp Tyr Asn Asn Phe Glu
      210                      215                      220
Leu Arg Ser Ala Leu Val Glu Lys Asp Val Leu Lys Ala Asn Lys Ile
      225                      230                      235                      240
Ile Lys Tyr Phe Glu Glu Asn Pro Lys Thr Asn Pro Ile Gln Met Thr
      245                      250                      255
Leu Ser Leu Leu Phe Asn Phe Tyr Ser Asn Leu Met Leu Ala Tyr Tyr
      260                      265                      270
Ala Pro Asp Lys Ser Glu Gln Gly Val Ala Thr Met Leu Gly Leu Lys
      275                      280                      285
Thr Pro Trp Gln Ala Arg Asp Tyr Leu Thr Ala Met Arg Lys Tyr Thr
      290                      295                      300
Gly Val Lys Thr Met Gln Ile Val Gly Glu Ile Arg Tyr Ala Asp Ala
      305                      310                      315                      320
Lys Ser Lys Gly Val Gly Asn Thr Ser Ile Ser Asp Gly Asp Ile Leu
      325                      330                      335
Arg Glu Leu Val Phe Lys Ile Leu His
      340                      345

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<210> 5442

<211> 777

<212> PRT

<213> B.fragilis

<400> 5442

```

Phe Asn Pro Leu Tyr Ser Val Leu Leu Asp Leu Met Lys Lys Asn Leu
1      5      10      15
Leu Leu Leu Phe Leu Phe Leu Leu Phe Leu Pro Met Leu Val Gln Ala
      20      25      30
Gln Lys Val Gly Leu Val Leu Ser Gly Gly Gly Ala Lys Gly Leu Thr
      35      40      45
His Ile Gly Ile Ile Arg Ala Leu Glu Glu Asn Asn Ile Pro Ile Asp
      50      55      60
Tyr Ile Thr Gly Thr Ser Met Gly Ala Ile Val Gly Ser Leu Tyr Ala
      65      70      75      80
Met Gly Tyr Ser Pro Asp Asp Met Glu Thr Leu Leu Lys Ser Glu Asp
      85      90      95
Phe Lys Arg Trp Tyr Ser Gly Glu Val Glu Glu Lys Tyr Met Tyr Tyr
      100      105      110
Phe Lys Lys Asn Leu Pro Thr Pro Glu Phe Phe Asn Ile Arg Phe Ser
      115      120      125
Phe Lys Asp Ser Leu Ser Leu Lys Pro Gln Phe Leu Pro Thr Ser Val
      130      135      140

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Val	Asn	Pro	Ile	Gln	Met	Asn	Leu	Val	Phe	Ile	Asp	Leu	Tyr	Ala	Arg
145					150					155					160
Ala	Thr	Ala	Ala	Cys	Asp	Gly	Asp	Phe	Asp	Lys	Leu	Phe	Val	Pro	Phe
				165					170						175
Arg	Cys	Ile	Ala	Ser	Asp	Val	Tyr	Asn	Lys	Lys	Gln	Leu	Ile	Leu	Lys
			180					185					190		
Arg	Gly	Asp	Leu	Gly	Asp	Ala	Val	Arg	Ala	Ser	Met	Ser	Phe	Pro	Phe
	195						200					205			
Met	Phe	Lys	Pro	Ile	Glu	Ile	Asp	Ser	Met	Leu	Ala	Tyr	Asp	Gly	Gly
	210					215						220			
Ile	Tyr	Asn	Asn	Phe	Pro	Thr	Asp	Val	Met	Arg	Glu	Asp	Phe	His	Pro
225					230					235					240
Asp	Ile	Ile	Ile	Gly	Ser	Val	Val	Ser	Thr	Asn	Pro	Gly	Lys	Pro	Lys
				245					250					255	
Glu	Asn	Asp	Leu	Met	Ser	Gln	Ile	Glu	Asn	Met	Val	Met	Gln	Lys	Thr
			260					265					270		
Asp	Tyr	Ser	Leu	Pro	Asp	Ser	Ala	Gly	Ile	Leu	Met	Thr	Phe	Lys	Tyr
	275						280					285			
Asn	Asp	Val	Ser	Leu	Met	Asp	Phe	Gln	Arg	Ile	Asp	Glu	Leu	Glu	Lys
	290					295					300				
Ile	Gly	Tyr	Asp	Arg	Thr	Met	Ser	Leu	Met	Asp	Ser	Ile	Lys	Ser	Arg
305					310					315					320
Ile	His	Arg	Arg	Val	Asn	Val	Asp	Asn	Ile	Arg	Leu	Arg	Arg	Leu	Val
				325					330					335	
Tyr	Lys	Ser	Asn	Tyr	Pro	Glu	Leu	Arg	Phe	Lys	Asn	Ile	Tyr	Ile	Asp
			340					345					350		
Gly	Ala	Asn	Thr	His	Gln	Gln	Val	Tyr	Ile	Lys	Lys	Glu	Phe	His	Thr
			355				360					365			
Ser	Asp	Asp	Lys	Glu	Phe	Thr	Tyr	Glu	Asp	Leu	Lys	Arg	Gly	Tyr	Phe
	370					375				380					
Arg	Leu	Leu	Ser	Asp	Asn	Met	Ile	Ser	Glu	Ile	Ile	Pro	His	Ala	Val
385					390					395					400
Phe	Asn	Pro	Glu	Asp	Asp	Thr	Tyr	Asp	Leu	His	Leu	Lys	Ile	Lys	Met
				405					410					415	
Glu	Asn	Glu	Phe	Ser	Val	Arg	Val	Gly	Gly	Asn	Val	Ser	Thr	Thr	Ser
			420					425					430		
Ser	Asn	Gln	Ile	Tyr	Leu	Gly	Leu	Ala	Tyr	Gln	Asn	Leu	Asn	Tyr	Tyr
	435					440						445			
Ser	Lys	Glu	Phe	Thr	Leu	Asp	Gly	Gln	Leu	Gly	Lys	Ile	Tyr	Asn	Asn
	450					455					460				
Ala	Gln	Phe	Met	Ala	Lys	Val	Asp	Phe	Ala	Thr	Thr	Ile	Pro	Thr	Ser
465					470					475					480
Tyr	Arg	Phe	Ile	Ala	Ser	Ile	Ser	Thr	Phe	Asp	Tyr	Phe	Lys	Lys	Asp
				485					490					495	
Lys	Leu	Phe	Ser	Lys	Asn	Asp	Lys	Pro	Ala	Phe	Asn	Gln	Lys	Asp	Glu
			500					505					510		
Arg	Phe	Leu	Lys	Leu	Lys	Val	Ala	Leu	Pro	Phe	Leu	Ser	Ser	Lys	Arg
	515					520						525			
Leu	Glu	Leu	Gly	Phe	Gly	Ile	Ala	Gln	Ile	Glu	Asp	Arg	Tyr	Phe	Gln
530					535						540				
Asn	Asn	Val	Ile	Asp	Phe	Asp	Lys	Asp	Lys	Tyr	Asp	Lys	Ser	Gly	Tyr
545					550					555					560
Leu	Leu	Phe	Gly	Gly	Ser	Val	Ser	Phe	Asn	Gly	Ser	Thr	Leu	Asn	Ser
				565					570					575	
Arg	Gln	Phe	Pro	Ile	Gln	Gly	Ala	Arg	Glu	Ala	Leu	Val	Ala	Gln	Ile
			580					585					590		
Phe	Thr	Gly	Asn	Glu	Ser	Phe	Arg	Pro	Gly	Val	Asn	Ser	Glu	Asn	Lys
	595						600					605			
Lys	Pro	Val	Lys	Glu	Lys	His	Ser	Trp	Leu	Gln	Leu	Ser	Tyr	Met	Lys

610		615		620
Glu Lys Tyr His Lys Met Gly Ala Asn Trp Ile Leu Gly Trp Tyr Leu				
625		630		635
Asp Ala Val Tyr Ala Ser Lys Asn Phe Ser Glu Asn Tyr Thr Ala Thr				
	645		650	655
Met Met Gln Ala Ser Glu Phe Ala Pro Thr Ala His Ser Lys Leu Thr				
	660		665	670
Tyr Asn Glu Ala Phe Arg Ala Asn Gln Tyr Val Ala Ala Gly Ile Arg				
	675		680	685
Pro Ile Tyr Arg Leu Asn Gln Met Phe His Val Arg Gly Glu Phe Tyr				
	690		695	700
Gly Phe Leu Pro Ile Phe Pro Ile Glu Arg Asn Ser Ile Asn Lys Ala				
705		710		715
Tyr Tyr Gly Lys Ala Phe Ser Arg Phe Glu Tyr Leu Gly Glu Ile Ser				
	725		730	735
Val Val Cys Gln Leu Pro Phe Gly Ala Ile Ser Ala Tyr Val Asn His				
	740		745	750
Tyr Ser Ser Pro Arg Arg Glu Trp Asn Val Gly Leu Thr Leu Gly Trp				
	755		760	765
Gln Leu Phe Asn Tyr Arg Phe Ile Glu				
770		775		

<210> 5443
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 5443
Val Ala Met Tyr Gly Asn Gly Val Thr Ile Gly Thr Leu Lys Asn Thr
1 5 10 15
Leu Lys Thr Val Asn Leu Ser Ile Pro Asp Gly His Leu Met Val His
20 25 30
Leu Pro Phe Ser Ala Gly Ser Cys Glu Val Val Val Gly Val Val Leu
35 40 45
Gln Lys Ala Ala Glu Cys His Ile Leu Thr Met Thr Cys Gln Thr Ile
50 55 60
Val Met Asn Met Glu Val Leu Gly Leu Phe
65 70

<210> 5444
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 5444
Pro Lys Asn Leu Lys Ser Ser Arg Thr Met Thr Ser Thr Asp Ser Ile
1 5 10 15
Leu Gln Leu Ile Ser Glu Ile His Ile Pro Gly Phe Phe Ile Thr Val
20 25 30
Asp Phe Leu Gln Ile Gly Lys Ala Ile Pro Gln Gly Ile Ser Gly Phe
35 40 45
Leu Lys Glu Lys Tyr Asp Lys Ile Ser His Gly Ala Ser Gly Arg Lys
50 55 60
Phe Ile Tyr Gln Lys Ser Gly Trp Arg Met Ala Phe Thr Phe Tyr Pro
65 70 75 80
Thr Asp Arg Val Val Asp Glu Lys Tyr Ala Met Lys Asn Lys Met Ile
85 90 95
Lys Lys Arg

<210> 5445
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 5445
 Leu Pro Val His Arg Ile Ile Tyr Leu Gln Lys Lys Phe Pro Lys Ser
 1 5 10 15
 Leu Gln Ile Gln Glu Lys Ala Val Ser Leu His Pro Leu Asn Lys Asn
 20 25 30
 Asn Gly Arg Val Ala Gln Leu Asn Arg Val Ala Asp Tyr Gly Ser Ala
 35 40 45
 Gly Tyr Arg Phe Glu Ser Cys Arg Asp His Phe Lys Val
 50 55 60

<210> 5446
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 5446
 Lys Thr Asn His Met Thr Thr Arg Met Tyr Val Ile Asn Thr Leu Ser
 1 5 10 15
 Asn Met His Val Gly Ser Gly Glu Val Asn Tyr Gly Val Ile Asp Asn
 20 25 30
 Leu Ile Gln Arg Asp Ser Val Thr Asn Leu Pro Asn Ile Asn Ser Ser
 35 40 45
 Gly Leu Lys Gly Ala Ile Arg Glu Tyr Phe Lys Glu Asn Glu Asn Leu
 50 55 60
 Val Arg Glu Leu Phe Gly Ser Ala Pro Lys Asp Glu Lys Thr Leu Pro
 65 70 75 80
 Gly Lys Val Arg Phe Phe Glu Ala Asn Leu Leu Ser Met Pro Val Arg
 85 90 95
 Ser Asp Lys Val Pro Phe Leu Met Ala Thr Ser Asp Glu Val Leu Gln
 100 105 110
 Glu Leu Ile Thr Lys Met Lys Phe Asn Cys Glu Glu Ala Thr Gln
 115 120 125
 Tyr Ile Ser His Leu Ser Thr Leu Leu Asp Asn Ile Lys Thr Gln Ala
 130 135 140
 Gln Gly Thr Asp Phe Ala Tyr Val Phe Asp Pro Ser Leu Gln Gly Ala
 145 150 155 160
 Ile Ile Glu Glu Val Ser Ile Arg Ala Thr Cys Pro Ser His Ile Pro
 165 170 175
 Leu Gln Leu Ser Leu Lys Lys Leu Leu Gly Asp Arg Leu Val Ile Leu
 180 185 190
 Ser His Lys Tyr Phe Ser Ile Leu Ser Asp Asp Asn His Leu Pro Val
 195 200 205
 Leu Ser Arg Asn Asn Leu Glu Asn Gly Gln Ser Ala Asn Leu Trp Tyr
 210 215 220
 Glu Gln Val Leu Pro Arg Tyr Ser Arg Leu Tyr Phe Met Leu Met Asp
 225 230 235 240
 Gly Asn Ala Gln Ser Glu Tyr Leu Lys Lys Phe Arg Asp Thr Leu Cys
 245 250 255
 Thr Pro Ser Thr Ile Ile Gln Ile Gly Ala Asn Ala Ser Ile Gly Tyr
 260 265 270
 Gly Tyr Cys Gln Ile Ser Glu Leu Ser Pro Phe
 275 280

<210> 5447
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 5447

Asn	His	Cys	Phe	Leu	Pro	Leu	Phe	Phe	Cys	Cys	Lys	Asn	Pro	Ala	Met	
1				5					10					15		
Ser	Val	Trp	Met	Tyr	Ile	Ala	Val	Thr	Asp	Pro	Gly	Tyr	Gly	Asn	Glu	
			20					25					30			
Gln	Asn	Asp	Glu	Phe	Met	Lys	Asn	Met	Gly	Ile	Glu	Ala	Phe	Val	Lys	
		35					40					45				
Tyr	Asn	Tyr	Phe	His	Lys	Glu	Gln	Lys	Arg	Thr	Trp	Asn	Lys	Asp	Ala	
	50					55					60					
Phe	Thr	Ile	Gln	Asn	Leu	Lys	Lys	Ala	Ser	Ile	Ala	Gly	His	Leu	Pro	
65					70					75					80	
Ser	Ile	Phe	Ile	Leu	Asn	Arg	Tyr	Phe	Tyr	Lys	Arg	Ser	Ser	Ala	Leu	
				85					90					95		
Lys	His	Phe	Thr	Asn	Leu	Pro	Ile	Ala	Lys	Ser	Ile	Cys	Ser	Leu	Glu	
			100					105						110		
Cys	Val	Ala	Ile	Asn	Glu	Lys	Arg	Ile	Asn	Val	Ser	Phe	Gly	Glu	His	
		115					120						125			
Ala	Gly	Gly	Thr	Thr	Gly	Phe	Thr	Asn	Thr	Pro	Ser	Ser	Asn	Asn	Ile	
	130					135							140			
Leu	Val	Thr	Ile	Asn	Val	Phe	Ser	Ile	Ser	Arg	Thr	Tyr	Arg	Gly	Met	
145					150					155					160	
Ile	Gly	Val	Glu	Val	Cys	Pro	Ile	Ser	Lys	Pro	Ser	Ser	Arg	Lys	His	
				165					170					175		
Phe	Lys	Glu														

<210> 5448
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 5448

Gly	Ser	Asn	Lys	Lys	Asp	Met	Gln	Lys	Gln	Ala	Lys	Glu	Ile	Lys	Lys	
1				5					10					15		
His	Leu	Phe	Leu	Leu	Gly	Gly	His	Asp	Leu	Glu	Met	Gln	Thr	Ile	Val	
			20					25					30			
Gln	Ile	Leu	Thr	Asp	Arg	Asn	Val	Ile	Phe	Lys	Asp	Arg	Tyr	Leu	Gln	
		35					40					45				
Trp	Asp	Asn	Ala	Leu	Leu	Ser	Gln	Tyr	Glu	Glu	Glu	Ile	Gln	Gln	Tyr	
	50					55					60					
Gly	Asn	Lys	Glu	Pro	Phe	Ile	Ile	Tyr	Gly	Val	Glu	Leu	Lys	Glu	Asp	
65					70					75					80	
Ile	Thr	Pro	Pro	Thr	Asn	Tyr	Ile	Arg	Ile	Asp	His	His	Asn	Glu	Tyr	
				85					90					95		
Ala	Thr	Tyr	Pro	Ser	Ala	Leu	Glu	Gln	Val	Ala	Ser	Ile	Leu	Asp	His	
			100					105					110			
Pro	Leu	Asn	Arg	Tyr	Gln	Thr	Leu	Val	Ala	Ala	Asn	Asp	Lys	Ala	Tyr	
		115					120					125				
Ile	Pro	Gly	Met	Leu	Glu	Ile	Gly	Ala	Ser	His	Glu	Glu	Ile	Asn	Leu	
	130					135					140					
Ile	Arg	Gln	Glu	Asp	Arg	Lys	Ala	Gln	Gly	Val	Ile	Glu	Asp	Asp	Glu	
145					150					155					160	
Lys	Leu	Ala	Gln	Glu	Ala	Ile	Thr	Asn	Gly	Thr	Glu	Lys	Ile	Gly	Ser	
				165					170					175		

Leu Tyr Val Val Phe Thr Thr Ala Asn Lys Phe Ser Pro Ile Cys Asp
 180 185 190
 Arg Leu Tyr Pro Tyr Glu Lys Leu Leu Ile Tyr Thr Pro Asn Glu Leu
 195 200 205
 Ile Tyr Tyr Gly Lys Gly Ile Asn Ser Ile Gln Lys Ile Leu Lys Arg
 210 215 220
 Tyr Thr Pro Ile Ser Asn Ile Phe Trp Gly Gly Gly Ile Asn Gly Phe
 225 230 235 240
 Ile Gly Thr Val Arg Asn Arg Leu Thr Thr Asn Glu Ile Leu Asn Ile
 245 250 255
 Val Glu Gln Ile Lys Leu Leu Glu Leu
 260 265

<210> 5449

<211> 248

<212> PRT

<213> B.fragilis

<400> 5449

Lys Arg Asn Lys Met Lys Thr Ile Phe Arg Met Leu Ser Val Leu Leu
 1 5 10 15
 Leu Thr Thr Gly Leu Leu Ser Ser Cys Ile Gln Ile Gly Glu Gly Ile
 20 25 30
 Gln Pro Ser Lys Lys Leu Ile Thr Arg Asp Tyr Lys Val Lys Glu Phe
 35 40 45
 Asn Lys Ile Asp Ala Gly Thr Val Gly Asn Ile Tyr Tyr Thr Gln Ser
 50 55 60
 Thr Asp Gly Lys Thr Asp Leu Gln Ile Tyr Gly Pro Asp Asn Ile Val
 65 70 75 80
 Ala Leu Ile Gln Val Ala Val Lys Asp Asn Thr Leu Phe Leu Ser Ile
 85 90 95
 Asp Lys Ser Lys Lys Val Arg Asn Phe Lys Lys Met Lys Ile Thr Ile
 100 105 110
 Thr Ser Pro Thr Leu Asn Gly Ile Ser Phe Lys Gly Val Gly Asp Val
 115 120 125
 His Ile Glu Asn Gly Leu Thr Thr Asp Asn Leu Asp Ile Glu Ser Lys
 130 135 140
 Gly Val Gly Asn Val Asp Ile Gln Ser Leu Thr Cys Gln Lys Leu Asn
 145 150 155 160
 Val Gln Ser Met Gly Val Gly Asp Val Lys Leu Glu Gly Thr Ala Gln
 165 170 175
 Ile Ala Ala Leu His Ser Lys Gly Val Gly Asn Ile Glu Ala Gly Asn
 180 185 190
 Leu Arg Ala Asn Ala Val Glu Ala Ser Ser Gln Gly Val Gly Asp Ile
 195 200 205
 Thr Cys Asn Ala Thr Glu Ser Ile Asp Ala Ala Val Arg Gly Val Gly
 210 215 220
 Ser Ile Lys Tyr Lys Gly Ser Pro Thr Ile Lys Ser Leu Ser Lys Lys
 225 230 235 240
 Gly Val Gly Thr Ile Lys Asn Ile
 245

<210> 5450

<211> 784

<212> PRT

<213> B.fragilis

<400> 5450

Lys Gln Asn Lys Lys Gly Ser Asn Asn Met Ile Arg His Tyr Leu Lys

1		5		10		15
Ile	Ala	Cys	Arg	Asn	Leu	Leu
		20		25		30
Ile	Leu	Gly	Leu	Ala	Ile	Gly
		35		40		45
Trp	Ile	Arg	Tyr	Glu	Met	Thr
		50		55		60
Arg	Ile	His	Leu	Val	Tyr	Gln
		65		70		75
Thr	Thr	Thr	Ile	Pro	Tyr	Pro
			85		90	
Pro	Glu	Val	Glu	Asp	Ala	Cys
		100		105		110
Thr	Val	Asp	Asp	Gly	Ala	Ile
		115		120		125
Ser	Cys	Phe	Met	His	Met	Phe
		130		135		140
Asp	Phe	Leu	Glu	Ser	Glu	Glu
		145		150		155
Lys	Glu	Leu	Phe	Gly	Thr	Glu
		165		170		175
Tyr	Gly	Ala	Pro	Lys	Thr	Val
		180		185		190
His	Thr	Asn	Leu	Pro	Phe	Ser
		195		200		205
His	Asn	Ala	Trp	Tyr	His	Gly
		210		215		220
Lys	Glu	Val	Asn	Ala	Glu	Thr
		225		230		235
Leu	Glu	Ala	Asp	Ser	Lys	Gly
		245		250		255
Ile	Ser	Lys	Cys	His	Tyr	Thr
		260		265		270
Phe	Ser	Tyr	Ile	Leu	Phe	Phe
		275		280		285
Cys	Ser	Leu	Ile	Asn	Tyr	Leu
		290		295		300
Arg	Ser	Arg	Glu	Leu	Ala	Leu
		305		310		315
His	Leu	Phe	Thr	Leu	Val	Thr
		325		330		335
Ala	Gly	Leu	Met	Gly	Met	Ala
		340		345		350
Lys	Glu	Leu	Ser	Gly	Val	Lys
		355		360		365
Leu	Tyr	Phe	Ala	Leu	Val	Ile
		370		375		380
Val	Thr	Phe	Tyr	Phe	Asn	Lys
		385		390		395
Lys	Thr	Val	Asn	Arg	Tyr	Gly
		405		410		415
Phe	Gln	Leu	Ser	Ile	Ser	Ile
		420		425		430
Met	Lys	Gln	Leu	Tyr	Tyr	Leu
		435		440		445
Lys	Asn	Ile	Ala	Thr	Leu	Ser
		450		455		460
Ala	Ala	Asp	Lys	Ile	Glu	Gln
		465		470		475
						480

Gly	His	Phe	Ser	Leu	Leu	Pro	Lys	Thr	Ala	Ser	Met	Ala	Met	His	Phe
				485					490					495	
Lys	Asp	Trp	Asp	Gly	Lys	Gln	Pro	Gly	Asp	Ala	Glu	Ile	Asp	Met	Glu
			500					505					510		
Val	Leu	Met	Glu	Ser	Glu	Glu	Leu	Ala	Gln	Phe	Tyr	Gly	Ile	Arg	Leu
		515					520					525			
Leu	Lys	Gly	Lys	Met	Leu	Lys	Glu	Gly	Glu	Arg	Asp	Ala	Gly	Thr	Ile
	530					535					540				
Val	Ile	Asn	Glu	Thr	Ala	Ala	Lys	Ala	Leu	Gly	Trp	Asn	Asp	Pro	Ile
545					550					555					560
Gly	Lys	Lys	Leu	Ile	Arg	Pro	Asn	Gly	Thr	Gly	Thr	Thr	Val	Ile	Gly
			565					570						575	
Leu	Val	Lys	Asp	Phe	His	Thr	Thr	Ser	Pro	Thr	Thr	Pro	Ile	Lys	Pro
			580					585					590		
Ile	Ala	Phe	Ile	Ala	Lys	Gly	Phe	Ser	Gly	Phe	Asp	Leu	Gly	Lys	Gly
		595					600					605			
Asp	Val	Leu	Ile	Lys	Tyr	Arg	Glu	Gly	Glu	Trp	Pro	Lys	Leu	Lys	Lys
	610					615					620				
Asp	Ile	Glu	Gln	Leu	Cys	Gln	Lys	Glu	Tyr	Pro	Glu	Asn	Lys	Ile	Arg
625					630					635					640
Leu	Ser	Asn	Met	Glu	Glu	Thr	Tyr	Asp	Asn	Tyr	Leu	Lys	Ser	Glu	Gln
			645					650						655	
Thr	Leu	Leu	Lys	Leu	Leu	Ser	Cys	Val	Ala	Val	Val	Cys	Ile	Leu	Ile
			660					665					670		
Ala	Val	Phe	Gly	Val	Phe	Ser	Leu	Val	Thr	Leu	Ala	Cys	Glu	Gln	Arg
		675					680					685			
Arg	Lys	Glu	Ile	Ala	Ile	Arg	Lys	Val	Asn	Gly	Ala	Thr	Leu	Gly	Asn
	690					695					700				
Ile	Leu	Ser	Ile	Phe	Ile	Lys	Glu	Tyr	Leu	Ile	Leu	Leu	Leu	Cys	Ala
705					710				715						720
Ser	Phe	Leu	Ala	Phe	Pro	Val	Ser	Tyr	Met	Ile	Met	Lys	Ala	Trp	Leu
			725					730					735		
Glu	Asn	Tyr	Val	Glu	Gln	Ile	Ser	Ile	Gly	Val	Ser	Met	Tyr	Val	Thr
		740						745				750			
Ile	Phe	Thr	Gly	Ile	Gly	Ile	Ile	Ile	Thr	Ala	Cys	Ile	Gly	Trp	Arg
	755					760						765			
Val	Trp	Lys	Ala	Ala	Arg	Glu	Asn	Pro	Ala	Glu	Val	Val	Lys	Thr	Glu
	770					775					780				

<210> 5451

<211> 131

<212> PRT

<213> B.fragilis

<400> 5451

Gln	Leu	Val	Lys	Gly	Asp	Asp	Phe	Val	Asn	Thr	Ile	Tyr	Lys	Phe	Gly
1				5					10					15	
Cys	Lys	Arg	Phe	Ile	Gln	Ser	Leu	Leu	Asn	His	Ala	Ala	Arg	Glu	Phe
			20					25					30		
Phe	Ile	Val	Lys	Thr	Ala	Leu	Ser	Gly	Lys	Thr	Asp	Ser	Thr	Pro	Lys
	35						40					45			
Leu	Phe	Gln	Leu	Ala	Gly	Ser	Asp	Ile	Arg	Cys	His	Asp	Asn	Asn	Ser
	50					55					60				
Ile	Leu	Glu	Val	Asn	His	Ser	Ala	Ile	Thr	Val	Ser	Gln	Pro	Thr	Phe
65					70				75						80
Val	His	His	Leu	Glu	Lys	Gln	Ile	Glu	His	Ile	Gly	Met	Arg	Leu	Phe
				85				90						95	
Tyr	Phe	Val	Lys	Gln	Tyr	Asp	Arg	Ile	Gly	Phe	Thr	Ala	Tyr	Phe	Leu
			100					105					110		

Cys Gln Leu Ser Ala Phe Leu Val Ser Tyr Val Ser Arg Arg Arg Ser
 115 120 125
 Asn Gln Ala
 130

<210> 5452
 <211> 383
 <212> PRT
 <213> B.fragilis

<400> 5452
 Ile Ile Ile Lys Met Asn Arg His Tyr Leu Ile Thr Leu Thr Pro Met
 1 5 10 15
 Asp Trp Phe Phe Phe Gly Gly Glu Arg Thr Leu Asp Asp Gly Lys Ser
 20 25 30
 Ala Asp Tyr Ile Ser His Ser Asn Lys Phe Pro Gln Gln Ser Ala Leu
 35 40 45
 Leu Gly Met Ile Arg Tyr Gln Leu Leu Lys Gln His Asn Leu Leu Ser
 50 55 60
 Gln Phe Pro Tyr Thr Glu Asn Lys Pro Thr Glu Lys Glu Ile Met Lys
 65 70 75 80
 Ala Leu Ile Gly Glu Gln Ser Phe Arg Met Thr Glu Arg Lys Ala Lys
 85 90 95
 Ser Leu Gly Leu Gly Val Ile Lys Gln Ile Ser Pro Leu Met Leu Ile
 100 105 110
 Glu Cys Lys Asp Asp Thr Ser Ser Arg Ser Ile Tyr Phe Pro Leu Pro
 115 120 125
 Leu Asp Asp Gly Tyr Lys Val Ser Phe Asn Glu Thr Ser Asn Glu Asp
 130 135 140
 Lys Val Phe Tyr Asn Gly Ile Glu Cys Pro Ile Pro Asn Val Tyr Pro
 145 150 155 160
 Ala Ser Glu Glu Gln Asp Ser Gly Asn Gln Lys Arg Lys Phe Phe Asp
 165 170 175
 His Lys Thr Tyr Asn Asn Tyr Leu Phe Trp Cys Thr Gln Gly Asn Asn
 180 185 190
 Gln Ile Lys Lys Leu Leu Ser Asp Glu Ile Trp Ile Ser Lys Met Gln
 195 200 205
 Ile Gly Ile Thr Lys His Val Glu Glu Gly Glu Asp Asn Asp Lys Ser
 210 215 220
 Phe Tyr Lys Gln Glu Phe Leu Gln Leu Lys Lys Ser Phe Ile Tyr Ala
 225 230 235 240
 Phe Tyr Ile Thr Leu Ser Gly Glu Ser Glu Leu Ser Ser Asp Ile Ile
 245 250 255
 Gln Leu Gly Gly Gln Arg Ser Val Phe Arg Met Glu Val Glu Ser Ile
 260 265 270
 Glu Glu Asn Ser Asp Ile Gln Glu Lys Tyr Gln Thr Ala Ala Gln Phe
 275 280 285
 Leu Thr Gln Ser Asp Arg Leu Leu Ile Leu Ser Pro Thr Tyr Val Asp
 290 295 300
 Asn Leu Lys Glu Leu Ser Ala Leu Cys Asn Phe Met Trp Ser Asp Ser
 305 310 315 320
 Ile Val Phe Arg Asn Ile Gln Thr Thr Asn Ala Ser Asn Phe Tyr Gly
 325 330 335
 Lys Pro Ile Lys Ser Ser Ser Lys Tyr His Phe Leu Lys Pro Gly Ser
 340 345 350
 Val Leu Tyr Phe Lys Gln Gly Lys Arg Lys Glu Val Glu Lys Leu Leu
 355 360 365
 Met Asp Tyr Thr Tyr Leu Arg Leu Ser Gly Tyr Asn Ile Tyr Ile
 370 375 380

<210> 5453
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 5453
 Gln Val Pro Lys Ala Ile Ser Met Ile His Leu Ala Ser Met Ala Lys
 1 5 10 15
 Phe Met Gln Lys Asp Val Ile Tyr Gln Met Phe Trp Gln Gln Tyr Lys
 20 25 30
 Glu Ile Arg Glu Ile Tyr Leu Phe Thr Arg Gly Thr Ala Ser Pro Ser
 35 40 45
 Pro Thr Ala Arg Ile Tyr Leu His Ala Leu Val Gly
 50 55 60

<210> 5454
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 5454
 Gly Leu Thr Asn Gly Arg Val Ala Gln Leu Asn Arg Val Ala Asp Tyr
 1 5 10 15
 Gly Ser Ala Gly Tyr Arg Phe Glu Ser Cys Arg Gly His Ser Lys Lys
 20 25 30
 Ile Thr Ile Asn Gly Arg Val Ala Gln Leu Asn Arg Val Ala Asp Tyr
 35 40 45
 Gly Ser Ala Gly Tyr Arg Phe Glu Ser Cys Arg Asp His Lys Asn Leu
 50 55 60
 His Asn Gln Ile Met Glu Val Phe Cys Phe Pro Cys Ile Ile Ser Phe
 65 70 75 80
 Ile Gly Ser Tyr Leu Asn Ser Glu Gly Phe Leu Phe Leu Ile Gly Ser
 85 90 95
 Leu Tyr

<210> 5455
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 5455
 Ile Leu Lys Lys Ile Phe Met Asn Tyr Lys Lys Lys Ile Ile Cys Leu
 1 5 10 15
 Leu Val Leu Phe Thr Ile Val Val Val Asn Val Leu Asn Val Val Val
 20 25 30
 Lys Ser Asp Asp Ala Glu Thr Leu Thr Leu Ser Gly Ile Glu Ala Val
 35 40 45
 Ala Ala Thr Tyr Glu Asn Ser Pro Gly Asn Tyr Thr Gly Ala His Asn
 50 55 60
 Gln Tyr Cys Thr Ser Pro Lys Asn Ala Thr Gly Cys Val Ser Asp Pro
 65 70 75 80
 Asp Pro Thr Arg Thr Cys Ser Tyr Ser Ile Phe Cys Lys Lys
 85 90

<210> 5456
 <211> 476
 <212> PRT

<213> B.fragilis

<400> 5456

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Leu Asn Arg Lys Lys Asn Ile Met Asn Gln Leu Thr Ala Ile Leu Lys
1      5      10      15
Gln His Thr Pro Met Ile His Phe Gln His Asn Glu Ser Gly Ala Thr
      20      25      30
Leu Arg Ala Ser Glu Val Lys Pro Leu Leu Asp Lys Phe Ile Leu Thr
      35      40      45
Lys Leu Gly Asn Gly Asp Ile Arg Glu Gly Arg Leu Tyr Ala Lys Lys
      50      55      60
Asn Asn Trp Leu Ile Asp Asn Glu Lys Asn Tyr Ala Leu Asn Tyr Lys
      65      70      75      80
Leu Ser Ile Ser Leu Gln Lys Lys Ser Arg Leu Glu Tyr Leu Ile Thr
      85      90      95
Ser Ser Thr Phe Pro Leu Pro Thr Glu Arg Pro Ser Asn Phe Phe Thr
      100     105     110
Ile Gln Asn Ser Pro Tyr Phe Ala Gln Glu Lys Cys Val Gly Ile Asn
      115     120     125
Thr Asn Ser Thr Ile Ile Leu Lys Lys Ser Asn Ser Asp Pro Arg Lys
      130     135     140
Lys Glu Ala Glu Phe Lys Glu Lys Asn Trp Ser Gln Ile Asp Lys Lys
      145     150     155     160
Gly Leu Glu Trp Gln Asp Phe Thr Ile Lys Ile Phe Ser Leu Lys Gly
      165     170     175
Asp Leu Ile Asn Lys Ile Gln Thr Tyr Leu Pro Ala Phe Phe Ile Cys
      180     185     190
His Asn Phe Gly Thr Arg Asn Asn Lys Gly Phe Gly Ser Phe Thr Val
      195     200     205
Glu Tyr Ile Asn Asn Gln Lys Asn Ile Cys Asn Val Glu Asp Thr Leu
      210     215     220
Lys Glu Asn Phe Ala Phe Val Tyr Lys Lys Lys Ile Ala Leu Ser Cys
      225     230     235     240
Gln Ser Thr Leu Asp Phe Ile Tyr Ile Tyr Asn Gln Ile Phe Ser Thr
      245     250     255
Ile Lys Lys Asp Tyr Gln Ile Leu Lys Ser Gly Tyr Asn Phe Arg Asn
      260     265     270
Glu Tyr Ile Lys Ser Leu Leu Phe Cys Tyr Phe Val Ser Lys Tyr Pro
      275     280     285
Asn Tyr Arg Trp Glu Lys Arg Lys Met Lys Gln Leu Ile Lys Ala Arg
      290     295     300
Gly Tyr Glu Leu Lys Gly Asp His Ser Pro Ile Ser Gly Ile Arg Glu
      305     310     315     320
Asn Asp Asn Ser Trp Asn Asp Pro Asn Pro Asn Gly Tyr Asn Tyr Ala
      325     330     335
Tyr Ile Arg Ala Ile Leu Gly Leu Ala Glu Gln Tyr Glu Phe Gln Leu
      340     345     350
Glu Thr Pro Tyr Gln Lys Ala Ile Val Lys Ile Lys Ser Ala Asn Asn
      355     360     365
Cys Ile Ser Arg Tyr Lys Ser Pro Leu Leu Phe Lys Ile Ile Asn Asn
      370     375     380
Ser Ile Tyr Leu Val Gly Asn Glu Ile Asn Thr Glu Ile Leu Asn Lys
      385     390     395     400
Pro Phe Gln Tyr Asn Tyr Ile Glu Gln Thr Lys Asn Lys Asn Met Arg
      405     410     415
Thr Gly Lys Ser Glu Ile Thr Glu Arg Thr Met His Ile Asn Glu Ile
      420     425     430
Glu Met Asn Tyr Asn Asn Arg Ile Asn Tyr His Tyr Thr Pro Thr Ser
      435     440     445

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Phe Ser Leu Ile Asp Phe Met Gln Tyr Ala Met Ser Tyr Lys Lys Asn
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 Gly Lys Asn Ile Leu Asn Tyr Ile Pro Leu Lys Gln
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<210> 5457
 <211> 295
 <212> PRT
 <213> B.fragilis

<400> 5457
 Ser Met Arg Lys Ile Lys Val Gly Ile Ile Gln Gln Ala Asn Thr Ser
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 Asp Ile Arg Ile Asn Leu Met Asn Leu Ala Lys Ser Ile Glu Ala Cys
 20 25 30
 Ala Ala Asn Gly Ala His Leu Val Val Leu Gln Glu Leu His Asn Ser
 35 40 45
 Leu Tyr Phe Cys Gln Thr Glu Asn Thr Asp Leu Phe Glu Leu Ala Glu
 50 55 60
 Pro Ile Pro Gly Pro Ser Thr Gly Phe Tyr Ser Glu Leu Ala Ala Ala
 65 70 75 80
 Asn Arg Ile Val Leu Val Thr Ser Leu Phe Glu Lys Arg Ala Pro Gly
 85 90 95
 Leu Tyr His Asn Thr Ala Val Val Phe Asp Arg Asp Gly Ser Ile Ala
 100 105 110
 Gly Lys Tyr Arg Lys Met His Ile Pro Asp Asp Pro Ala Tyr Tyr Glu
 115 120 125
 Lys Phe Tyr Phe Thr Pro Gly Asp Ile Gly Phe Glu Pro Ile Gln Thr
 130 135 140
 Ser Leu Gly Lys Leu Gly Val Leu Val Cys Trp Asp Gln Trp Tyr Pro
 145 150 155 160
 Glu Ala Ala Arg Leu Met Ala Leu Lys Gly Ala Glu Ile Leu Ile Tyr
 165 170 175
 Pro Thr Ala Ile Gly Trp Glu Ser Thr Asp Thr Asp Asp Glu Lys Lys
 180 185 190
 Arg Gln Leu Asn Ala Trp Ile Ile Ser Gln Arg Ala His Ala Val Ala
 195 200 205
 Asn Gly Leu Pro Val Ile Ser Val Asn Arg Val Gly His Glu Pro Asp
 210 215 220
 Pro Ser Gly Gln Thr Asn Gly Ile Leu Phe Trp Gly Asn Ser Phe Val
 225 230 235 240
 Ala Gly Pro Gln Gly Glu Tyr Leu Ala Gln Ala Gly Asn Asp Arg Ser
 245 250 255
 Glu Asn Met Ile Val Glu Val Asp Leu Glu Arg Ser Glu Asn Val Arg
 260 265 270
 Arg Trp Trp Pro Phe Leu Arg Asp Arg Arg Ile Asp Glu Tyr Gly Asn
 275 280 285
 Leu Thr Lys Arg Phe Ile Asp
 290 295

<210> 5458
 <211> 612
 <212> PRT
 <213> B.fragilis

<400> 5458
 Thr Phe Gly Asn Asn Thr Glu Ser Glu Leu Ile Cys Thr Phe Ala Asp
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 Tyr Phe Asn Lys Asn Ile Asn Asn Ile Leu Asn Met Phe Arg Thr His

Asn Ala Tyr Asp Met Val Ile Asn Gly Val Glu Val Gly Gly Gly Ser
 500 505 510
 Ile Arg Ile His Asp Ser Gln Leu Gln Asn Lys Met Phe Glu Leu Leu
 515 520 525
 Gly Phe Thr Pro Glu Arg Ala Gln Glu Gln Phe Gly Phe Leu Met Asn
 530 535 540
 Ala Phe Lys Phe Gly Ala Pro Pro His Gly Gly Leu Ala Tyr Gly Leu
 545 550 555 560
 Asp Arg Trp Val Ser Leu Phe Ala Gly Leu Asp Ser Ile Arg Asp Cys
 565 570 575
 Ile Ala Phe Pro Lys Asn Asn Ser Gly Arg Asp Val Met Leu Asp Ala
 580 585 590
 Pro Ala Ala Leu Asp Pro Ser Gln Leu Glu Glu Leu Asn Leu Ile Val
 595 600 605
 Asp Ile Lys Glu
 610

<210> 5459

<211> 415

<212> PRT

<213> B.fragilis

<400> 5459

Tyr Ser Met Lys Lys Tyr Pro Lys Ile Gly Ile Arg Pro Thr Ile Asp
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 Gly Arg Gln Gly Gly Val Arg Glu Ser Leu Glu Glu Lys Thr Met Asn
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 Leu Ala Lys Ala Val Ala Glu Leu Ile Thr Ser Asn Leu Lys Asn Gly
 35 40 45
 Asp Gly Thr Pro Val Glu Cys Val Ile Ala Asp Gly Thr Ile Gly Arg
 50 55 60
 Val Ala Glu Ser Ala Ala Cys Ala Glu Lys Phe Glu Arg Glu Gly Val
 65 70 75 80
 Gly Ala Thr Ile Thr Val Thr Ser Cys Trp Cys Tyr Gly Ala Glu Thr
 85 90 95
 Met Asp Met Asn Pro Tyr Tyr Pro Lys Ala Val Trp Gly Phe Asn Gly
 100 105 110
 Thr Glu Arg Pro Gly Ala Val Tyr Leu Ala Ala Val Leu Ala Gly His
 115 120 125
 Ala Gln Lys Gly Leu Pro Ala Phe Gly Ile Tyr Gly Arg Asp Val Gln
 130 135 140
 Asp Leu Asn Asp Asn Ser Ile Pro Ala Asp Val Ala Glu Lys Ile Leu
 145 150 155 160
 Arg Phe Ala Arg Ala Ala Gln Ala Val Ala Thr Met Arg Gly Lys Ser
 165 170 175
 Tyr Leu Ser Met Gly Ser Val Ser Met Gly Ile Ala Gly Ser Ile Val
 180 185 190
 Asn Pro Asp Phe Phe Gln Glu Tyr Leu Gly Met Arg Asn Glu Ser Ile
 195 200 205
 Asp Leu Thr Glu Ile Ile Arg Arg Met Ala Glu Gly Ile Tyr Asp Lys
 210 215 220
 Glu Glu Tyr Ala Lys Ala Met Ala Trp Thr Glu Lys Tyr Cys Lys Lys
 225 230 235 240
 Asn Glu Gly Asn Asp Phe Asn Ile Pro Glu Lys Thr Lys Thr Arg Ala
 245 250 255
 Gln Lys Asp Glu Asp Trp Glu Phe Ile Val Lys Met Thr Ile Ile Met
 260 265 270
 Arg Asp Leu Met Gln Gly Asn Pro Lys Leu Lys Glu Leu Gly Phe Lys
 275 280 285

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Glu Glu Ala Leu Gly His Asn Ala Ile Ala Ala Gly Phe Gln Gly Gln
 290 295 300
 Arg Gln Trp Thr Asp Phe Tyr Pro Asn Gly Asp Phe Ser Glu Ala Leu
 305 310 315 320
 Leu Asn Thr Ser Phe Asp Trp Asn Gly Ile Arg Glu Ala Phe Val Val
 325 330 335
 Ala Thr Glu Asn Asp Ala Cys Asn Gly Val Ala Met Leu Phe Gly His
 340 345 350
 Leu Leu Thr Asn Arg Ala Gln Ile Phe Ser Asp Val Arg Thr Tyr Trp
 355 360 365
 Ser Pro Glu Ala Val Lys Arg Val Thr Gly Lys Glu Leu Thr Gly Met
 370 375 380
 Ala Ala Asn Gly Ile Ile His Leu Ile Asn Ser Gly Ala Thr Thr Leu
 385 390 395 400
 Asp Gly Thr Gly Gln Gln Thr Asn Ala Asn Gly Leu Asn His Gly
 405 410 415

<210> 5460

<211> 136

<212> PRT

<213> B.fragilis

<400> 5460

Leu Lys Thr Asn Lys Ser Glu Lys Met Asn Tyr Met Ile Gln His Tyr
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 Leu Lys Thr Ala Ile Arg Asn Leu Leu Lys Tyr Lys Thr His Ser Ile
 20 25 30
 Ile Ser Ala Ile Cys Leu Ser Val Gly Met Thr Cys Phe Ser Ile Ile
 35 40 45
 His Phe Phe Ile Asn Glu Ile Asp Gly Ala Ser Arg Asn Met Pro Asn
 50 55 60
 Phe Glu Gln Arg Ile Ser Ile Arg Met Ile Asn Ser Asn His Glu Val
 65 70 75 80
 Gly Gly Trp Gly Trp Ser Leu Asn Ser Ser Glu Ile Arg Thr Leu Thr
 85 90 95
 Glu His Pro Ile Pro Gly Ile Lys Gln Ile Cys Phe His Ser Phe Gln
 100 105 110
 Arg Glu Asp Glu Val Val Phe Ile Asn Arg Glu Gln Gly Arg Lys Ala
 115 120 125
 Leu His His Leu Ile Tyr Gly Tyr
 130 135

<210> 5461

<211> 164

<212> PRT

<213> B.fragilis

<400> 5461

Lys Lys Lys Lys Thr Met Asn Trp Lys Leu Val Glu Cys Glu Ile Ala
 1 5 10 15
 Leu Ile Val Ser Leu Thr Val Ile Glu Cys Val Asn Met Gly Gln Asn
 20 25 30
 Ser Pro Lys Asp Ile Thr Cys Leu Thr Val Phe Phe Cys Ile Met Ile
 35 40 45
 Val Leu Leu Pro Leu Ile Gly Val Leu Gln Gln Trp His Leu Ser Cys
 50 55 60
 Phe Gln Asn Arg Gln Lys Glu Lys Glu Tyr Gln Ala Lys Gln Glu Thr
 65 70 75 80
 Asp Glu Lys Met Lys Thr Trp Leu Leu Ala Arg Glu Ala Ile Ile Lys

				85						90					95				
Asp	Lys	Glu	Lys	Glu	Glu	Leu	Thr	Asn	Lys	Val	Asn	Gly	Leu	Gln	Gln				
			100						105				110						
Lys	Cys	Asp	Ser	Leu	Ile	Glu	Asn	Gln	Glu	Asn	Glu	Leu	Lys	Lys	Phe				
		115						120				125							
Tyr	Leu	Ser	Ile	Leu	Ser	Ile	Ile	Gly	Thr	Lys	Asp	Asp	Leu	Lys	Ser				
	130						135					140							
Ile	Glu	Glu	Asn	Phe	Lys	Lys	Met	Lys	Asp	Phe	Phe	Glu	Glu	Tyr	Lys				
145					150					155					160				
Lys	Ile	Thr	Lys																

<210> 5462
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 5462																			
Gly	Ala	Gly	Lys	Lys	Ser	Leu	Thr	Ser	Ser	His	Ile	Trp	Ile	Leu	Ile				
1			5						10					15					
Leu	Ile	Ser	Phe	His	Ile	Ile	Met	His	Pro	Ser	Tyr	Met	Ala	Asn	Ala				
			20					25					30						
Phe	Pro	Thr	Thr	Pro	Lys	Glu	Val	Val	Leu	Ser	Glu	Ser	Cys	Ala	Arg				
		35					40					45							
Lys	Val	Tyr	Gly	Lys	Glu	Gln	Pro	Gly	Arg	Ala	His	Tyr							
	50					55					60								

<210> 5463
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 5463																			
Arg	Val	Asn	Leu	Gln	Pro	Lys	Cys	Ser	Phe	Pro	Val	Arg	Leu	Ser	Glu				
1			5						10					15					
Lys	Ile	Ser	Pro	Asn	His	Leu	Val	Arg	Val	Val	Ser	Tyr	Ile	Val	Asp				
			20					25					30						
Ala	Leu	Asp	Ile	Ser	Tyr	Leu	Leu	Ser	Ala	Tyr	Asn	Gly	Gly	Gly	Thr				
		35					40					45							
Asn	Ser	Tyr	His	Pro	Arg	Met	Ile	Leu	Lys	Val	Leu	Phe	Tyr	Ala	Tyr				
	50					55					60								
Leu	Asn	Asn	Ile	Tyr	Ser	Cys	Arg	Lys	Thr	Gln	Lys	Ala	Leu	Gln	Lys				
65					70					75				80					
Asn	Ile	His	Ile	Met	Trp	Leu	Ser	Gly	Asn	Ser	Thr	Ser	Asn	Phe	Arg				
			85						90					95					
Thr	Ile	Asn	Asp	Phe	Arg	Gly	Lys	Val											
			100					105											

<210> 5464
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 5464																			
Phe	Lys	Ser	Leu	Tyr	Phe	Ile	Tyr	Thr	Leu	Gln	Gln	Lys	Met	Tyr	Arg				
1			5						10					15					
Val	Gln	Lys	Glu	Arg	Leu	Phe	Leu	Ile	Leu	Ala	Leu	Met	Val	Gly	Ile				
			20					25					30						
Arg	Lys	Ile	Asp	Gln	Ser	Ser	Asp	Pro	Lys	Glu	Trp	Val	Val	Lys	Ser				

35	40	45
Arg Lys Glu Phe Lys Met	Phe Phe Ser Ile Pro	Ile Phe
50	55	60

<210> 5465
 <211> 255
 <212> PRT
 <213> B.fragilis

<400> 5465
 Cys Asn Glu Asp Ser Gln Lys Tyr Arg Val Phe Pro Trp Arg Ala Arg
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 Thr Ala Tyr Cys Cys Cys Leu Thr His Pro Leu Ser Val Asp Thr Leu
 20 25 30
 Asn Ile Leu Trp Arg Thr Met Leu Asn Glu Arg Gln Lys Phe Pro Ile
 35 40 45
 Arg Thr Gly Leu Lys Leu Thr Val Ser Asp Asn Asn Gly Val Val Arg
 50 55 60
 Ser Ser Phe Ser Pro Asp Ser Leu Ser Cys Leu Ser Tyr Ser Ser Ile
 65 70 75 80
 Phe Thr Tyr Tyr Val Gly Tyr Arg Cys Glu Ile Glu Ile Leu Gly Phe
 85 90 95
 Val Ser Ile Ser Phe Phe Ser Val Phe Val Asn Ile Val Trp Thr Leu
 100 105 110
 Ile Gly Val Val Val Ala Phe Val Leu Cys Val Ile Leu Thr Ile Tyr
 115 120 125
 Ile Tyr Lys Leu Ser Val His Pro Pro Lys Ile Lys Glu Val Thr Thr
 130 135 140
 Tyr Val Gln Thr Val Ala Val Lys Lys Gly Thr Leu Pro Ile Tyr Asp
 145 150 155 160
 Leu Lys Asp Asp Leu Lys Leu Asp Val Gly Lys Gly Val Leu Ile Cys
 165 170 175
 Glu Asn Met Glu Val Ser Leu Thr Pro Gln Gln Arg Val Leu Leu Val
 180 185 190
 Leu Phe Ile Lys Ala Glu Asn His Thr Leu Ser Met Ser Gln Ile Met
 195 200 205
 Ala Asp Val Trp Pro Gly Lys Ser Ile Ser Pro Asp Cys Phe His Lys
 210 215 220
 Ala Ile Glu Arg Leu Arg Asp Leu Leu Arg Gln Leu Pro Met Thr Ile
 225 230 235 240
 Gln Ile Glu Tyr Leu Gly Glu Glu Ile Tyr Gln Met Gln Ile Leu
 245 250 255

<210> 5466
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 5466
 Phe Ile Leu Asp Lys Gln Asp Lys Met Val Cys Tyr Thr Thr Ser Lys
 1 5 10 15
 Ala Glu Asn Lys Ala Ile Ile Tyr Ser Asn His Leu Leu Tyr Asn Gln
 20 25 30
 Gln Ser Tyr Ser Tyr Leu Asn Ile Glu Lys His Pro Leu Cys Tyr Lys
 35 40 45
 Lys Ser Lys Ser Ile Asp Phe Thr Asn Leu Lys Tyr Lys Ser Lys Ser
 50 55 60
 Ile Phe Leu
 65

<210> 5467
 <211> 608
 <212> PRT
 <213> B.fragilis

<400> 5467

Gly	Thr	Leu	Leu	Lys	Ile	Val	Lys	Leu	Lys	Glu	Ser	Glu	Lys	Asp	Lys
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Ser	Thr	Tyr	Tyr	Lys	Val	Val	Asn	Val	Ile	Arg	Asn	Leu	Pro	Lys	Thr
			20					25				30			
Leu	Asn	Val	Glu	Thr	Asp	Ile	Tyr	Phe	Ser	His	Leu	Arg	Glu	Glu	Asn
		35					40					45			
Arg	Gln	Gln	Gly	Tyr	Ile	Thr	Glu	Gly	Thr	Leu	Glu	Thr	Ala	Asp	Gly
		50				55					60				
Leu	Asn	Lys	Ala	Asn	Glu	Ser	Leu	Lys	Gly	Ile	Thr	Thr	Leu	His	Asn
65					70					75					80
Asn	Glu	Met	Ala	Tyr	Phe	Ile	Ala	Asn	Lys	Glu	Ala	Asp	Ser	Tyr	His
				85					90					95	
Asp	Pro	Gln	Arg	Met	Ile	Gly	Ile	Ala	Phe	Ile	Thr	Phe	Leu	Ser	Ser
			100					105					110		
Leu	Ile	Leu	Leu	Ser	Gly	Met	Ile	Asn	Phe	Leu	Lys	Phe	Ile	Ile	Gln
		115					120					125			
Ser	Phe	Tyr	Asn	Arg	Asn	Arg	Glu	Leu	Ala	Leu	Arg	Lys	Ser	Leu	Gly
	130					135					140				
Ala	Ser	Pro	Lys	Ser	Leu	Phe	Ala	Leu	Leu	Phe	Thr	Glu	Ala	Phe	Trp
145					150					155					160
Met	Leu	Thr	Phe	Ser	Leu	Leu	Phe	Ser	Leu	Val	Leu	Ser	Glu	Cys	Thr
				165					170					175	
Cys	Leu	Leu	Leu	Thr	Thr	Tyr	Ile	Pro	Pro	Lys	Glu	Met	Ile	Pro	Ile
			180					185					190		
Asp	Ile	Gln	Thr	Leu	Tyr	Gly	Ile	Gln	Val	Lys	Leu	Tyr	Ile	Gly	Leu
		195					200					205			
Leu	Leu	Ile	Cys	Thr	Leu	Val	Met	Leu	Tyr	Pro	Ile	Arg	Arg	Leu	Gln
	210					215					220				
Arg	Ser	Gly	Leu	Ala	Gly	His	Met	Lys	Thr	Asn	Ser	His	Arg	His	Leu
225					230					235					240
Phe	Arg	Asn	Ile	Met	Met	Cys	Val	Gln	Leu	Cys	Val	Cys	Ile	Phe	Phe
				245					250					255	
Leu	Gly	Met	Ser	Ile	Ala	Ile	His	Leu	Phe	Asn	Ser	Val	Gly	Ser	Val
		260						265					270		
Leu	Tyr	Leu	Pro	Leu	Ser	Asp	Lys	Glu	Thr	Asn	Ser	Thr	Leu	Cys	Phe
	275						280					285			
Glu	Met	Asn	Ser	Val	Thr	Leu	Gly	Lys	Asn	Lys	Asp	Ala	Ile	Leu	Ser
	290					295					300				
Gln	Ile	Lys	Met	Leu	Pro	Gly	Val	Glu	Asn	Ile	Ser	Ser	Ala	Leu	Met
305					310					315					320
Ser	Gly	Asn	Tyr	Asn	Ser	Phe	Leu	Thr	Ser	Asp	Tyr	Glu	Ser	Ala	Asp
				325					330					335	
His	Arg	Thr	Leu	Thr	Val	Arg	Val	Arg	Gln	Gly	Asp	Pro	Ser	Tyr	Phe
			340					345					350		
Gln	Phe	Phe	Arg	Ile	Pro	Phe	Arg	Gly	Glu	Ile	Val	Glu	Pro	His	Thr
	355					360						365			
Ser	Asn	Val	Val	Tyr	Ile	Ser	Glu	Ala	Phe	Gln	Lys	Gln	Leu	Glu	Asn
	370					375					380				
Asp	Ser	Val	Ser	Gly	Asn	Val	Lys	Leu	Gly	Lys	Glu	Asn	Tyr	Arg	Ile
385					390					395					400
Ala	Gly	Thr	Tyr	Lys	Ala	Cys	Tyr	Gly	Glu	Asn	Ile	Ser	Glu	His	Asn
				405					410					415	

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Gln Tyr Asn Ile Ser Val Phe Phe Pro Thr Glu Glu Ala Ser Val Ile
 420 425 430
 Tyr Ile Arg Phe Arg Asp Asp Ile Ser Phe Gly Lys Ala Lys Ser Glu
 435 440 445
 Ile Glu Arg Val Cys Arg Asn Tyr Val Pro Glu Ser Leu Pro Leu Asp
 450 455 460
 Ile Gln Arg Leu Asp Ile Arg Arg Ser Thr Thr Gln Gly Ile Arg Asp
 465 470 475 480
 Leu Met Gly Asp Ala Ser Leu Leu Leu Gly Ile Ile Ser Ala Leu Leu
 485 490 495
 Val Ile Leu Ser Ile Tyr Ser Ala Ile Ser Met Asp Thr Val Ser Arg
 500 505 510
 Gln Lys Glu Val Ala Ile Arg Lys Ile Asn Gly Ala Thr Pro Lys Ile
 515 520 525
 Ile Ala Leu Met Phe Gly Lys Ala Tyr Ile Ile Gln Phe Ile Leu Ala
 530 535 540
 Tyr Thr Ile Thr Tyr Pro Leu Leu Arg Leu Leu Val Ile Asp Ile Thr
 545 550 555 560
 Lys Asp Ser Pro Ile Ser Ser Ile Thr Gly Phe Ala Trp Gly Ile Tyr
 565 570 575
 Leu Phe Ile Leu Ile Gly Leu Leu Ile Phe Val Thr Thr Ala Tyr Lys
 580 585 590
 Ile Tyr Arg Ile Met His Leu Asn Pro Ala Glu Ile Ile Lys Asn Glu
 595 600 605

<210> 5468

<211> 297

<212> PRT

<213> B.fragilis

<400> 5468

Met Lys Thr Leu Leu Asn Ile Lys Leu His Leu Ser Lys Lys Asn Ile
 1 5 10 15
 Phe Thr Ile Leu Val Phe Ile Leu Val Leu Ser Gly Thr Thr Gly Cys
 20 25 30
 Ile Gln His Lys Ser Asp Gln Lys Arg Leu Pro Ala Leu Ser Phe Thr
 35 40 45
 Val Asn Gly Glu Ser Phe Glu Met Ile Pro Val Glu Gly Gly Thr Phe
 50 55 60
 Ile Met Gly Gly Thr Ser Glu Gln Gly Asn Asp Cys Glu Asn Asn Glu
 65 70 75 80
 Lys Pro Thr His Glu Glu Thr Leu Pro Phe Phe Tyr Ile Gly Lys Tyr
 85 90 95
 Glu Val Thr Gln Lys Leu Trp Lys Ala Val Met Gly Thr Asp Phe Asp
 100 105 110
 Gln Ser Tyr Asn Ser Gly Cys Glu Asp Cys Pro Ala Glu Tyr Ile Ser
 115 120 125
 Trp Asn Asp Thr Gln Lys Phe Ile Ser Lys Leu Asn Thr Leu Thr Asn
 130 135 140
 Lys Thr Phe Arg Leu Pro Thr Asp Ile Glu Trp Glu Tyr Ala Ala Arg
 145 150 155 160
 Gly Gly Lys Tyr Ser Glu Lys Tyr Lys Tyr Ser Gly Ser Asn Asp Ile
 165 170 175
 Asp Glu Val Ala Trp Tyr Ile Glu Asn Tyr Gln Lys Ser Lys Tyr Gly
 180 185 190
 Asp Lys Gly Thr Thr His Pro Val Gly Met Lys Lys Pro Asn Glu Leu
 195 200 205
 Gly Leu Tyr Asp Met Ser Gly Asn Val Trp Glu Trp Cys Asp Asn Trp
 210 215 220

Tyr Thr Gln Glu Tyr Ser Gln Asn Gly Lys Ser Val His Pro Gly Trp
 225 230 235 240
 Pro Phe Asn Gly Thr Ser Ala Phe Phe Arg Arg Val Leu Arg Gly Gly
 245 250 255
 Ser Trp Gly Gly Thr Ala Lys Gly Cys Arg Val Ser Tyr Ile Asp Tyr
 260 265 270
 Asp Val Pro Asn Tyr Arg Asp Glu Tyr Gly Gly Phe Arg Leu Val Leu
 275 280 285
 Val Pro Asp Ser Val Gln Thr Ala Asn
 290 295

<210> 5469

<211> 279

<212> PRT

<213> B.fragilis

<400> 5469

Ile Thr Val Cys Thr Ile Ser Arg Ile Phe Ala Gly Arg Ile Arg Ile
 1 5 10 15
 Tyr Phe Gln Gln Tyr Met Lys Lys Phe Ile Leu Asp Leu Thr Val Thr
 20 25 30
 Glu Asn Leu Arg Leu His Thr Asn Tyr Val Leu Leu Lys Leu Thr Ser
 35 40 45
 Gln Thr Val Leu Pro Asp Met Leu Pro Gly Gln Phe Ala Glu Ile Arg
 50 55 60
 Ile Asp Gly Ser Pro Thr Thr Phe Leu Arg Arg Pro Ile Ser Ile Asn
 65 70 75 80
 Tyr Val Asp Arg Gln Arg Asn Glu Val Trp Phe Leu Ile Gln Leu Val
 85 90 95
 Gly Asp Gly Thr Lys Arg Leu Ala Gln Val Asn Arg Gly Glu Ile Ile
 100 105 110
 Asn Val Val Leu Pro Leu Gly Asn Ser Phe Thr Met Pro Glu Lys Pro
 115 120 125
 Ser Asp Lys Leu Leu Leu Val Gly Gly Gly Val Gly Thr Ala Pro Met
 130 135 140
 Leu Tyr Leu Gly Glu Gln Leu Ala Lys Asn Gly Ser Lys Pro Thr Phe
 145 150 155 160
 Leu Leu Gly Ala Arg Ser Asn Lys Asp Leu Leu Gln Leu Glu Asp Phe
 165 170 175
 Ala Ala Tyr Gly Glu Val Tyr Thr Thr Glu Asp Gly Ser His Gly
 180 185 190
 Glu Lys Gly Tyr Val Thr Gln His Ser Ile Leu Asn Lys Ile Lys Phe
 195 200 205
 Glu Gln Ile Tyr Thr Cys Gly Pro Lys Pro Met Met Met Ala Val Ala
 210 215 220
 Lys Tyr Ala Lys Gly Asn Asp Ile Asn Cys Glu Val Ser Leu Glu Asn
 225 230 235 240
 Thr Met Ala Cys Gly Ile Gly Ala Cys Leu Cys Cys Val Glu Asn Thr
 245 250 255
 Thr Glu Gly His Leu Cys Val Cys Lys Glu Gly Pro Val Phe Asn Ile
 260 265 270
 Asn Lys Leu Leu Trp Gln Ile
 275

<210> 5470

<211> 101

<212> PRT

<213> B.fragilis

<400> 5470

Thr Leu Cys Cys Glu Met Val Lys Ala Lys Lys Ile Phe Cys Val Val
 1 5 10 15
 Ala Tyr Asp Ile Gln Asp Asp Arg Ser Arg Ile Gln Ile Ser Lys Ile
 20 25 30
 Leu Glu Lys Tyr Gly Thr Arg Ile Asn Tyr Ser Val Phe Glu Cys Met
 35 40 45
 Phe Thr Asp Arg Gln Phe Gln Lys Ile Gln Ile Asn Leu Glu Arg Trp
 50 55 60
 Ile Asn Arg Arg Tyr Asp Thr Val Val Tyr Tyr Pro Met Cys Ile Asn
 65 70 75 80
 Cys Tyr Thr Arg Ile Ile Tyr Gln Pro Ile Arg Lys Lys Ile Ile Lys
 85 90 95
 Thr Val Glu Ile Val
 100

<210> 5471

<211> 247

<212> PRT

<213> B.fragilis

<400> 5471

Asp Cys Phe Arg Gln Lys Tyr Gly Phe Leu Phe Lys Tyr Leu Tyr Phe
 1 5 10 15
 Cys Glu Lys Leu Lys Ile Met Arg Ile Asp Ile Ile Thr Val Leu Pro
 20 25 30
 Glu Met Ile Glu Gly Phe Phe Asn Cys Ser Ile Met Lys Arg Ala Gln
 35 40 45
 Asp Lys Gly Leu Ala Glu Ile His Ile His Asn Leu Arg Asp Tyr Thr
 50 55 60
 Glu Asp Lys Tyr Arg Arg Val Asp Asp Tyr Pro Phe Gly Gly Phe Ala
 65 70 75 80
 Gly Met Val Met Lys Ile Glu Pro Ile Glu Arg Cys Ile Asn Ala Leu
 85 90 95
 Lys Ala Glu Arg Asp Tyr Asp Glu Val Ile Phe Thr Thr Pro Asp Gly
 100 105 110
 Glu Gln Phe Asp Gln Lys Met Ala Asn Ser Leu Ser Leu Ser Gly Asn
 115 120 125
 Leu Ile Ile Leu Cys Gly His Phe Lys Gly Ile Asp Tyr Arg Ile Arg
 130 135 140
 Glu His Leu Ile Thr Lys Glu Ile Ser Ile Gly Asp Tyr Val Leu Thr
 145 150 155 160
 Gly Gly Glu Leu Ala Ala Ala Val Met Ala Asp Ala Ile Val Arg Ile
 165 170 175
 Ile Pro Gly Val Ile Ser Asp Glu Gln Ser Ala Leu Ser Asp Ser Phe
 180 185 190
 Gln Asp Asn Leu Leu Ala Ala Pro Val Tyr Thr Arg Pro Ala Glu Tyr
 195 200 205
 Lys Gly Trp Lys Val Pro Glu Ile Leu Leu Ser Gly His Glu Ala Lys
 210 215 220
 Ile Lys Glu Trp Glu Leu Gln Gln Ser Leu Glu Arg Thr Arg Arg Leu
 225 230 235 240
 Arg Pro Asp Leu Leu Glu Asp
 245

<210> 5472

<211> 279

<212> PRT

<213> B.fragilis

<400> 5472

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Ile Phe Ile Ser Lys Met Ala Arg Glu Ala Lys Asn Glu Pro Lys Glu
1      5      10      15
Leu Thr Val Glu Gln Lys Leu Lys Ala Leu Tyr Gln Leu Gln Thr Thr
20      25      30
Leu Ser Lys Ile Asp Glu Ile Lys Thr Leu Arg Gly Glu Leu Pro Leu
35      40      45
Glu Val Gln Asp Leu Glu Asp Glu Ile Ala Gly Leu Ser Thr Arg Ile
50      55      60
Asp Lys Ile Lys Ser Glu Val Asp Glu Leu Lys Ser Ala Ile Ala Gly
65      70      75      80
Lys Arg Val Glu Ile Glu Ala Ala Lys Ala Ser Val Glu Lys Tyr Lys
85      90      95
Ser Gln Gln Asp Asn Val Arg Asn Asn Arg Glu Tyr Asp Phe Leu Thr
100     105     110
Lys Glu Ile Glu Phe Gln Ser Leu Glu Met Glu Leu Cys Glu Lys Arg
115     120     125
Ile Lys Glu Phe Thr Ala Glu Glu Gln Glu Lys Ser Glu Glu Ile Glu
130     135     140
Lys Asn Thr Lys Ala Leu Glu Glu Arg Gln Lys Asp Leu Asp Gln Lys
145     150     155     160
Lys Asn Glu Leu Asp Glu Ile Ile Glu Glu Thr Lys Gln Glu Glu Glu
165     170     175
Lys Leu Arg Asp Lys Ala Lys Asp Leu Glu Thr Lys Ile Glu Pro Arg
180     185     190
Leu Leu Gln Ser Phe Lys Arg Ile Arg Lys Asn Ser Arg Asn Gly Leu
195     200     205
Gly Ile Val Tyr Val Gln Arg Asp Ala Cys Gly Gly Cys Phe Asn Lys
210     215     220
Ile Pro Pro Gln Arg Gln Leu Asp Ile Arg Ser Arg Lys Lys Ile Ile
225     230     235     240
Val Cys Glu Tyr Cys Gly Arg Ile Met Ile Asp Pro Glu Leu Ala Gly
245     250     255
Val Glu Ile Glu His Lys Val Glu Glu Ala Pro Val Thr Thr Lys Arg
260     265     270
Ala Ile Arg Arg Lys Ala Glu
275

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<210> 5473

<211> 452

<212> PRT

<213> B.fragilis

<400> 5473

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Tyr Leu Ser Ser Gln Lys Met Ala Val Ala Arg Gly Arg Leu Ser Ala
1      5      10      15
Ser Ser Cys Asn Ser Ser Ser Ser Ser Ile Gly Asp Ile Val Ala Ser
20      25      30
Leu Cys Cys Trp His Glu Ile Ile Lys Lys Lys Glu Arg Ser Asn Gly
35      40      45
Lys Asn Ala Phe Ile Gly Leu Ser Leu Tyr Lys Leu Gly Gly Lys Tyr
50      55      60
Ile Lys Lys Ser Ile Lys Ala Arg Gln Gly Ala Ile Phe Phe Leu Tyr
65      70      75      80
Leu Gln Ala Asn Phe Leu Leu Lys Met Lys Ile Lys Glu Ile Val Ser
85      90      95
Ala Leu Glu Arg Phe Ala Pro Leu Pro Leu Gln Asp Gly Phe Asp Asn
100     105     110

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Ala Gly Leu Gln Ile Gly Leu Thr Asp Ala Glu Thr Thr Gly Ala Leu
 115 120 125
 Leu Cys Leu Asp Val Thr Glu Ala Val Leu Asp Glu Ala Ile Ala Ser
 130 135 140
 Gly Cys Asn Leu Ile Ile Ser His His Pro Leu Ile Phe Lys Gly Tyr
 145 150 155 160
 Lys Ser Ile Thr Gly Lys Asp Tyr Val Glu Arg Cys Ile Leu Lys Ala
 165 170 175
 Ile Lys Asn Asp Ile Val Ile Tyr Ser Ala His Thr Asn Leu Asp Asn
 180 185 190
 Val Pro Gly Gly Val Asn Phe Lys Ile Ala Glu Lys Ile Gly Leu Lys
 195 200 205
 Asn Val Arg Ile Leu Asp Pro Lys Glu Ser Ser Leu Ile Lys Leu Val
 210 215 220
 Thr Phe Val Pro Ser Ala Gln Ala Glu Glu Val Arg Asn Ala Leu Phe
 225 230 235 240
 Thr Ala Gly Cys Gly Cys Ile Gly Asn Tyr Asp Ser Cys Ser Tyr Asn
 245 250 255
 Thr Glu Gly Glu Gly Thr Phe Arg Ala Gln Glu Gly Ser His Pro Phe
 260 265 270
 Cys Gly Thr Val Gly Glu Leu His Arg Glu Thr Glu Val Arg Ile Glu
 275 280 285
 Thr Ile Leu Pro Glu Tyr Lys Lys Gly Glu Val Ile Arg Ala Leu Leu
 290 295 300
 Ser Lys His Pro Tyr Glu Glu Pro Ala Tyr Asp Leu Tyr Pro Leu His
 305 310 315 320
 Asn Ser Trp Ala Gln Val Gly Ser Gly Ile Val Gly Glu Leu Glu Glu
 325 330 335
 Pro Glu Ser Glu Leu Glu Phe Leu Lys Arg Ile Lys Lys Ile Phe Glu
 340 345 350
 Val Gly Cys Leu Lys His Asn Lys Leu Thr Gly Arg Leu Ile Gln Lys
 355 360 365
 Val Ser Leu Cys Gly Gly Ala Gly Ala Phe Leu Ile Pro Gln Ala Val
 370 375 380
 Arg Ser Gly Ala Asp Val Phe Ile Thr Gly Glu Ile Lys Tyr His Asp
 385 390 395 400
 Tyr Phe Gly Arg Glu Thr Asp Ile Leu Leu Ala Glu Ile Gly His Tyr
 405 410 415
 Glu Ser Glu Gln Tyr Thr Lys Glu Ile Phe Tyr Ser Ile Ile Arg Asp
 420 425 430
 Leu Phe Pro Asn Phe Ala Leu Gln Phe Ser Lys Val Asn Thr Asn Pro
 435 440 445
 Ile Lys Tyr Leu
 450

<210> 5474

<211> 63

<212> PRT

<213> B.fragilis

<400> 5474

Thr Tyr Asn Gly Glu Glu Gln Cys Glu Glu Leu Cys Phe His Ile Gln
 1 5 10 15
 Cys Lys Phe Val Lys Gly Asp Met Glu Val Ile Cys Met Asn Ile Ala
 20 25 30
 Leu Asn Tyr Ala Asn Val Ser Arg Ser Lys Met Asn Gln Glu Leu Leu
 35 40 45
 Arg Phe Ile Gly Tyr Ile Ser Phe Asn Cys Val Ser Val Leu Ile
 50 55 60

<210> 5475
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 5475

Val	Ala	Ser	Gly	Ile	Tyr	Tyr	Tyr	Trp	Cys	Ser	Val	Arg	Ser	Leu	Phe
1				5					10					15	
Met	Ile	Tyr	Ser	Leu	Lys	Thr	Lys	Lys	Met	Gly	Ile	Met	Val	Gly	Leu
			20					25					30		
Pro	Thr	Ser	Gly	Gly	Thr	Glu	Lys	Asp	Leu	Gln	Leu	Asn	Phe	Gly	Leu
		35					40					45			
Thr	Val	Asn	Asp	Gln	Val	Glu	Met	Leu	Ala	Pro	Phe	Leu	Pro	Ala	Glu
	50					55					60				
Trp	Phe	Leu	Gln	Ser	Gly	Ile	Gln	Leu	Thr	Trp	Pro	His	Ala	Gly	Thr
65				70					75						80
Asp	Trp	Ala	Tyr	Met	Leu	Ala	Glu	Val	Gln	Glu	Cys	Phe	Ile	Asn	Ile
			85					90						95	
Ala	Arg	Glu	Ile	Ala	Lys	Arg	Glu	Leu	Leu	Ile	Val	Thr	Pro	Tyr	
		100					105					110			
Pro	Glu	Glu	Val	Arg	Lys	Gln	Ile	Gly	Thr	Val	Asn	Met	Asp	Asn	
	115					120					125				
Val	Arg	Phe	Leu	Lys	Cys	Asp	Thr	Asn	Asp	Thr	Trp	Ala	Arg	Asp	His
	130					135					140				
Gly	Ala	Ile	Thr	Leu	Met	Asp	Thr	Gly	Gly	Ala	Ser	Leu	Leu	Asp	Phe
145				150						155					160
Thr	Phe	Asn	Gly	Trp	Gly	Glu	Lys	Phe	Glu	Ala	Arg	Leu	Asp	Asn	Gln
			165					170						175	
Ile	Thr	Arg	Arg	Ala	Val	Glu	Ala	Gly	Ala	Leu	Lys	Gly	Gln	Tyr	Lys
		180						185					190		
Asp	Cys	Leu	Asn	Phe	Val	Leu	Glu	Gly	Gly	Ser	Ile	Glu	Ser	Asp	Gly
	195						200					205			
Ala	Gly	Thr	Leu	Leu	Thr	Thr	Ser	Glu	Cys	Leu	Leu	Ser	Pro	His	Arg
	210				215						220				
Asn	Ser	Pro	Met	Asn	Arg	Val	Asp	Ile	Glu	Glu	Tyr	Leu	Cys	Arg	Val
225				230					235						240
Phe	His	Leu	Gln	Arg	Val	Leu	Trp	Leu	Asp	His	Gly	Tyr	Leu	Ser	Gly
			245					250						255	
Asp	Asp	Thr	Asp	Ser	His	Ile	Asp	Thr	Leu	Ala	Arg	Phe	Cys	Ser	Pro
		260						265					270		
Asp	Thr	Ile	Ala	Tyr	Val	Lys	Cys	Thr	Asp	Ser	Glu	Asp	Glu	His	Tyr
	275					280						285			
Glu	Ala	Leu	Cys	Lys	Met	Glu	Glu	Gln	Leu	Lys	Thr	Phe	Arg	Thr	Thr
	290					295					300				
Ser	Gly	Ala	Pro	Tyr	Arg	Leu	Leu	Ala	Leu	Pro	Met	Ala	Asp	Lys	Ile
305				310						315					320
Glu	Val	Glu	Gly	Glu	Arg	Leu	Pro	Ala	Thr	Tyr	Ala	Asn	Phe	Leu	Ile
			325					330					335		
Met	Asn	Asp	Val	Val	Leu	Tyr	Pro	Thr	Tyr	Asn	Gln	Pro	Glu	Asn	Asp
		340						345					350		
Lys	Leu	Ala	Lys	Glu	Val	Leu	Cys	Glu	Ala	Phe	Pro	Thr	Tyr	Glu	Val
	355					360						365			
Val	Gly	Ile	Asp	Cys	Arg	Ala	Leu	Ile	Lys	Gln	His	Gly	Ser	Leu	His
	370					375				380					
Cys	Val	Thr	Met	Gln	Tyr	Pro	Thr	Gly	Val	Ile	Lys				
385				390						395					

<210> 5476


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Ile Phe Ile Gly Ser Leu Phe Leu Leu Thr Ser Cys Met Phe Tyr Ser
    435                      440                      445
Gln Tyr Arg Phe Met Ser Arg Thr Asp Lys Gly Leu Val Thr Asp His
    450                      455                      460
Ile Trp Gln Ile Asp Leu Gly Phe Asp Ala Thr Tyr Asn Thr Asp Cys
    465                      470                      475                      480
Thr Pro Phe Ile Glu Ala Leu Lys Gln Asn Ser Ala Ile Asp Asp Val
    485                      490                      495
Thr Ala Leu Thr Gln Pro Leu Leu Val Leu Arg Gly Glu Trp Tyr Cys
    500                      505                      510
Ser Phe Ile Thr Gln Phe Pro Ile Glu Gly Arg Asn Asn Val Asp Glu
    515                      520                      525
Ala Thr Glu Asp Asn Cys Ile Val Val Gln Lys Asn Phe Leu Ser Phe
    530                      535                      540
Phe Gly Met Lys Met Lys Glu Gly Glu Trp Ile Gln Asp Gln Gly Thr
    545                      550                      555                      560
Arg Asp Ile Val Ile Asn Glu Thr Gly Ala Arg Glu Leu Asn Ile Pro
    565                      570                      575
Ser Leu Thr Gly Arg Leu Ile Leu Ser Asp Asp Glu Asp Ser Glu Asn
    580                      585                      590
His Ala Val Pro Thr Arg Ile Ser Gly Ile Leu Arg Asp Phe Tyr Tyr
    595                      600                      605
Cys Pro Met Gln Tyr Pro Leu Ser Lys Val Phe Phe Met Tyr Gln Asn
    610                      615                      620
Asn Ala Asp Ala Ala Arg Gly Tyr Asn Gly Phe Arg Tyr Phe Tyr Ile
    625                      630                      635                      640
Lys Val His Pro Asp Asn Glu Lys Gln Ala Leu Gln Tyr Ala Arg Arg
    645                      650                      655
Ile Tyr Ser Gln Tyr Ser Lys Lys Glu Ile Ser Glu Asp Met Gln Ile
    660                      665                      670
Ile Gln Leu Ser Thr Leu Met Glu Leu Phe Asn Arg Pro Glu Lys Thr
    675                      680                      685
Met Phe Arg Ile Phe Leu Leu Leu Ala Val Leu Cys Ile Leu Ile Ser
    690                      695                      700
Ser Phe Gly Val Phe Phe Leu Val Ser Leu Ser Thr Glu Gln Arg Lys
    705                      710                      715                      720
Lys Glu Ile Ala Ile Arg Lys Val Asn Gly Ala Gln Phe Ser Asp Ile
    725                      730                      735
Leu Tyr Leu Phe Leu Lys Glu Tyr Leu Trp Leu Thr Leu Val Ser Asn
    740                      745                      750
Ala Ile Ala Leu Pro Leu Gly Tyr Leu Phe Ile Lys Arg Trp Leu Glu
    755                      760                      765
Thr Tyr Ala Tyr His Thr Asp Ile His Gly Trp Leu Phe Val Cys Val
    770                      775                      780
Phe Leu Phe Thr Cys Ile Ile Val Ile Leu Ser Val Met Arg Gln Val
    785                      790                      795                      800
Val Val Ala Ala Lys Ile Asn Pro Ala Glu Ser Val Lys Ser Glu
    805                      810                      815

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<210> 5477

<211> 396

<212> PRT

<213> B.fragilis

<400> 5477

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Leu Phe Met Gly Leu Leu Gln Glu Lys Leu Ala Lys Tyr Asp Leu Pro
1          5          10          15
Gln Gln Ile Lys Ala Lys Gly Val Tyr Pro Tyr Phe Arg Cys Ile Glu
20          25          30

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Ser Glu Gln Asn Thr Glu Val Ile Met Ser Gly Arg Lys Val Leu Met
  35          40          45
Phe Gly Ser Asn Ser Tyr Leu Gly Leu Thr Asn His Pro Lys Val Ile
  50          55          60
Glu Ala Ala Val Glu Ala Thr Arg Lys Tyr Gly Thr Gly Cys Ala Gly
  65          70          75          80
Ser Arg Phe Leu Asn Gly Thr Leu Asp Leu His Leu Gln Leu Glu Lys
          85          90          95
Glu Leu Ala Glu Phe Val Gly Lys Glu Asp Ala Ile Ile Tyr Ser Thr
          100          105          110
Gly Phe Gln Val Asn Leu Gly Val Val Ser Cys Val Thr Gly Arg Glu
          115          120          125
Asp Tyr Val Ile Cys Asp Glu Leu Asp His Ala Ser Ile Val Glu Gly
          130          135          140
Arg Arg Leu Ser Phe Ser Thr Ile Leu Lys Phe Lys His Asn Asp Met
          145          150          155          160
Glu Ser Leu Glu Lys Glu Leu Gln Lys Cys Arg Pro Asp Ala Val Lys
          165          170          175
Leu Ile Val Val Asp Gly Val Phe Ser Met Glu Gly Asp Ile Ala Asn
          180          185          190
Leu Pro Glu Ile Val Arg Leu Ser Lys Lys Tyr Asp Ala Asn Ile Met
          195          200          205
Val Asp Glu Ala His Gly Leu Gly Val Leu Gly Asn His Gly Arg Gly
          210          215          220
Thr Cys Asp His Phe Gly Leu Thr Lys Glu Val Asp Leu Ile Met Gly
          225          230          235          240
Thr Phe Ser Lys Ser Leu Ala Ala Ile Gly Gly Phe Ile Ala Ala Asp
          245          250          255
Glu Ser Ile Ile Asn Tyr Leu Arg His Asn Ser Arg Ser Tyr Ile Phe
          260          265          270
Ser Ala Ser Asn Thr Pro Ala Ala Thr Ala Ala Ala Arg Ala Ala Leu
          275          280          285
Gln Ile Met Lys Asn Glu Pro Glu Arg Ile Glu His Leu Trp Asp Ile
          290          295          300
Thr Asn Tyr Ser Leu Lys Cys Phe Arg Glu Leu Gly Phe Glu Ile Gly
          305          310          315          320
His Thr Ser Thr Pro Ile Ile Pro Leu Tyr Val Arg Asp Met Glu Lys
          325          330          335
Thr Phe Met Val Thr Lys Met Leu Phe Asp Glu Gly Val Phe Val Asn
          340          345          350
Pro Val Val Pro Pro Ala Cys Ser Pro Asn Asp Thr Leu Ile Arg Phe
          355          360          365
Ser Leu Met Ala Thr His Ser Lys Glu Gln Ile Asp Phe Ala Ile Gly
          370          375          380
Lys Leu Val Lys Cys Phe Lys Ala Leu Asp Leu Leu
          385          390          395

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<210> 5478

<211> 189

<212> PRT

<213> B.fragilis

<400> 5478

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Phe Val Phe Met Arg Lys Ser Asn Asp Ile Ile Phe Tyr Ser Leu Leu
  1          5          10          15
Ala Leu Cys Leu Phe Thr Asn Cys Leu Phe Ile Gly Tyr Tyr Tyr Tyr
          20          25          30
Gln Gln Asn Arg Glu Val Leu Leu Gly Gln Glu Leu Glu His Gln Lys
          35          40          45

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Lys Gln Asn Tyr Glu Leu Ile Val Asn Gln Ile Glu Ser Gly Ile Ile
 50 55 60
 Pro His Val Ile Ser Asp Lys Lys Glu Phe Ala Gly Tyr Phe Val Leu
 65 70 75 80
 Val Phe Pro Asn Gly Ile Cys Asp Val Cys Asn Lys Trp Leu Phe Lys
 85 90 95
 Gln Ile Ser Glu Leu Ser Ser Thr Ser Asp Leu Val Val Val Val Pro
 100 105 110
 Asp Lys Leu Lys Lys Asn Met Glu Ile Tyr Asn Thr Val Tyr Lys Leu
 115 120 125
 Lys Leu Ser Ser Ile Phe Cys Ser Glu Lys Tyr Ala Met Pro Gln Glu
 130 135 140
 Glu Phe Lys Asp Met Thr Tyr Ile Phe Tyr Cys Ser Lys Thr Gly Thr
 145 150 155 160
 Val Leu Tyr Pro Leu Ala Leu His His Lys Asn Ile Asp Leu Asp Leu
 165 170 175
 Tyr Phe Lys Leu Val Lys Ser Ile Asp Leu Asp Phe Leu
 180 185

<210> 5479

<211> 261

<212> PRT

<213> B.fragilis

<400> 5479

Trp Asn Leu Met Lys Thr Lys Gln Glu Ile Val Ala Asn Trp Leu Pro
 1 5 10 15
 Arg Tyr Thr Lys Arg Asn Leu Glu Asp Phe Gly Glu Tyr Ile Leu Leu
 20 25 30
 Thr Asn Phe Asn Lys Tyr Val Glu Ile Phe Ala Glu Lys Phe Asn Val
 35 40 45
 Pro Ile Leu Gly Lys Asp Ala Asn Met Ile Ser Ala Ser Ala Glu Gly
 50 55 60
 Ile Thr Ile Ile Asn Phe Gly Met Gly Ser Pro Asn Ala Ala Ile Ile
 65 70 75 80
 Met Asp Leu Leu Ser Ala Ile Ser Pro Lys Ala Cys Leu Phe Leu Gly
 85 90 95
 Lys Cys Gly Gly Ile Asp Lys Lys Asn Lys Ile Gly Asp Leu Ile Leu
 100 105 110
 Pro Ile Ala Ala Ile Arg Gly Glu Gly Thr Ser Asn Asp Tyr Phe Pro
 115 120 125
 Pro Glu Val Pro Ser Leu Pro Ala Phe Met Leu Gln Arg Ala Val Ser
 130 135 140
 Ser Ala Ile Arg Asp Tyr Ala Arg Asp Tyr Trp Thr Gly Thr Val Tyr
 145 150 155 160
 Thr Thr Asn Arg Arg Ile Trp Glu His Asp Asp Thr Phe Lys Glu Tyr
 165 170 175
 Leu Lys Arg Thr Arg Ala Met Ala Val Asp Met Glu Thr Ala Thr Leu
 180 185 190
 Phe Ser Cys Gly Phe Ala Asn His Ile Pro Thr Gly Ala Leu Leu Leu
 195 200 205
 Val Ser Asp Gln Pro Met Ile Pro Glu Gly Val Lys Thr Asp Lys Ser
 210 215 220
 Asp Asn Ile Val Thr Lys Asn Tyr Val Glu Glu His Val Glu Ile Gly
 225 230 235 240
 Ile Ala Ser Leu Arg Met Ile Ile Asp Glu Lys Lys Thr Val Lys His
 245 250 255
 Leu Lys Phe Asp Trp
 260

<210> 5480
 <211> 464
 <212> PRT
 <213> B.fragilis

<400> 5480

Gln	Leu	Leu	Met	Lys	Thr	Val	Arg	Glu	Thr	Ile	Leu	Glu	Pro	Ile	Ile	1	5	10	15
Asn	Ile	Val	Gln	Val	Pro	Lys	Met	Leu	Gln	Asp	Val	Phe	Arg	Ile	Leu	20	25	30	
Ile	Gln	Pro	Ala	Leu	Val	His	Ile	Gln	Phe	Phe	Val	Lys	Asn	Asn	Ser	35	40	45	
Tyr	Leu	Phe	Lys	Cys	Tyr	Arg	Lys	Arg	Cys	Phe	Pro	Leu	Pro	Val	Tyr	50	55	60	
Ser	Asn	Asn	Met	Leu	Val	Met	Lys	Tyr	Leu	Asn	Leu	Phe	Ile	Phe	Val	65	70	75	80
Leu	Leu	Leu	Ala	Gly	Cys	Asn	Arg	Pro	Val	Lys	His	Ser	Asp	Ile	Ile	85	90	95	
Gln	Ala	Asp	Thr	Met	Val	Ser	Ile	Ile	Pro	Gln	Glu	Asp	Thr	Ile	Thr	100	105	110	
Leu	Ser	Ala	Leu	Phe	Ser	Arg	Cys	Glu	Ile	Val	Lys	Leu	Asn	Asp	Ile	115	120	125	
Val	Leu	Ala	Ser	Ile	Asn	Lys	Val	Phe	Lys	Tyr	Asp	Ser	Leu	Trp	Ile	130	135	140	
Val	Gln	Gly	Lys	Ser	Asp	Gln	Gly	Gly	Val	His	Leu	Phe	Asn	Asn	Glu	145	150	155	160
Gly	Arg	Tyr	Leu	Lys	Thr	Val	Leu	Lys	Trp	Gly	Gln	Gly	Pro	Glu	Glu	165	170	175	
Ala	Tyr	Asp	Ile	Trp	Ser	Ile	Lys	Leu	Leu	Asp	Gly	Ser	Ile	Tyr	Leu	180	185	190	
Leu	Ile	Asn	Ser	Gly	Thr	Glu	Val	Val	Glu	Tyr	Ser	Leu	Gln	Lys	Gln	195	200	205	
Lys	Met	Val	Glu	Arg	Phe	Arg	Leu	Pro	Ser	Glu	Ile	Leu	Ser	Ala	Thr	210	215	220	
Asp	Phe	Val	Val	Asp	Asn	Gly	Gly	Asn	Tyr	Ile	Phe	Leu	Lys	Ser	Ile	225	230	235	240
Ser	Arg	Glu	Lys	Lys	Glu	Glu	Tyr	Lys	Leu	Tyr	Val	Tyr	Asn	Lys	245	250	255		
Lys	Glu	Gly	Thr	Ile	Val	Asn	Arg	Ile	Leu	Asn	Met	Asp	Lys	Lys	Ser	260	265	270	
Ser	Glu	Tyr	Ile	Ser	Phe	Asp	Gln	Ser	Asp	Cys	Leu	Tyr	Arg	Val	Gln	275	280	285	
Asp	Glu	Ile	Tyr	Tyr	Tyr	Glu	Val	Phe	Arg	Asn	Gly	Ile	Cys	Arg	Leu	290	295	300	
Ser	Ala	Asn	Asp	Met	Thr	Gly	Tyr	Ile	Ala	Phe	Lys	Gln	Asn	Glu	Tyr	305	310	315	320
Thr	Phe	Pro	Glu	Lys	Glu	Leu	Tyr	Asn	Glu	Asp	His	Thr	Phe	Gln	Ser	325	330	335	
Phe	Ile	Asp	Val	Cys	Glu	Asn	Ser	Pro	Phe	Ile	Trp	Ala	His	Arg	Asn	340	345	350	
Leu	Phe	Glu	Gly	Glu	Arg	Phe	Val	Ser	Ser	Thr	Tyr	Met	Tyr	Lys	Lys	355	360	365	
Glu	Leu	Phe	Trp	Asn	Ile	Ile	Asp	Lys	Ser	Asp	Tyr	Ser	Val	His	Ser	370	375	380	
Tyr	Lys	Trp	Val	Tyr	Asp	Leu	Ile	Leu	Asn	Glu	Val	Val	Pro	Val	385	390	395	400	
Glu	Asp	Tyr	Leu	Tyr	Arg	Ala	Asn	Val	Gln	Glu	Asn	Ile	His	Tyr	Tyr	405	410	415	

GenBank accession number: F01011.1 (B.fragilis)

Thr Leu Ser Phe Tyr Asp Phe Asp Arg Ile Met Gln Leu Lys Lys Lys
 420 425 430
 Cys Lys Lys Ser Val Gly Glu Lys Trp Met Val Lys Leu Asp Asp Met
 435 440 445
 Leu Asp Glu Asn Ser Asn Asp Ile Ile Val Cys Phe Tyr Glu Lys Lys
 450 455 460

<210> 5481

<211> 471

<212> PRT

<213> B.fragilis

<400> 5481

Pro Lys Leu Met Lys Leu Arg Ile Gly Ser Ile Thr Phe Leu Leu Phe
 1 5 10 15
 Leu Ser Ser Val Ala Phe Pro Gln Ala Thr Ser Arg Tyr Leu Asp Lys
 20 25 30
 Pro Leu Pro Gln Gly Trp Glu Glu Asp Thr Gln Ile Phe Gln Gln Val
 35 40 45
 Leu Pro Val Asp Asp Gln Trp Trp Lys Ala Phe Gln Asp Pro Val Leu
 50 55 60
 Asp Ser Leu Ile Ser Val Ala Val Lys Gln Asn Tyr Ser Val Leu Thr
 65 70 75 80
 Ala Ile Asp Arg Ile Asn Met Ala Lys Ala Asn Leu Arg Met Glu Arg
 85 90 95
 Gly Asn Phe Phe Pro Thr Ile Gly Leu Asn Ala Gly Trp Thr Arg Gln
 100 105 110
 Gln Ser Ser Gly Asn Thr Ser Asp Leu Pro Gln Ser Thr Gln His Tyr
 115 120 125
 Tyr Asp Ala Ser Leu Asn Met Ser Trp Glu Leu Asp Leu Phe Gly Ser
 130 135 140
 Ile Arg Asn Arg Val Lys Ala Gln Lys Glu Asn Phe Ala Ala Ser Lys
 145 150 155 160
 Glu Glu Tyr Thr Gly Thr Met Ile Ser Leu Cys Ala Gln Val Ala Ser
 165 170 175
 Ala Tyr Ile Asn Leu Arg Glu Leu Gln Gln Glu Leu Ala Val Val Gln
 180 185 190
 Lys Asn Cys Ala Ser Gln Glu Ala Val Leu Lys Ile Thr Glu Val Arg
 195 200 205
 Tyr Asn Thr Gly Leu Val Ser Lys Leu Asp Val Ala Gln Ala Lys Ser
 210 215 220
 Val Phe Phe Ser Thr Lys Ala Ser Ile Pro Gln Ile Glu Ser Gly Ile
 225 230 235 240
 Asn Gln Tyr Ile Thr Thr Leu Ala Ile Leu Leu Gly Thr Tyr Pro Gln
 245 250 255
 Glu Val Arg Pro Ala Leu Thr Ala Pro Gly Thr Leu Pro Asp Tyr Met
 260 265 270
 Glu Pro Ile Gly Val Gly Leu Pro Ala Asp Leu Leu Leu Arg Arg Pro
 275 280 285
 Asp Ile Arg Ser Ala Glu Arg Ser Val Asn Ala Gln Ala Ala Leu Val
 290 295 300
 Gly Ala Ser Lys Ser Asp Trp Leu Pro Gln Val Phe Leu Lys Gly Ser
 305 310 315 320
 Val Gly Tyr Ala Ala Lys Asp Leu Lys Asp Leu Thr His His Lys Ser
 325 330 335
 Met Thr Tyr Glu Ile Ala Pro Ala Leu Ser Trp Thr Leu Phe Lys Gly
 340 345 350
 Thr Gln Leu Val Asn Ala Thr Lys Leu Ala Lys Ala Gln Leu Asp Glu
 355 360 365

Ala Ile Asn Gln Phe Asn Gln Thr Val Leu Thr Ala Val Gln Glu Thr
 370 375 380
 Asp Asn Ala Met Asn Ala Tyr Arg Asn Ser Ile Lys Gln Ile Val Ala
 385 390 395 400
 Leu Arg Glu Val Arg Asn Gln Gly Gln Glu Thr Leu Thr Leu Ser Leu
 405 410 415
 Glu Leu Tyr Lys Gln Gly Leu Thr Pro Phe Gln Asn Val Leu Asp Ala
 420 425 430
 Gln Arg Ser Leu Leu Ser Tyr Glu Asn Gln Leu Val Gln Ala Arg Gly
 435 440 445
 Tyr Ser Leu Leu Gln Leu Ile Ala Met Tyr Gln Ala Leu Gly Gly Gly
 450 455 460
 Trp Ser Gly Asn Leu Asn Asn
 465 470

<210> 5482
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 5482
 Asn Asn Ile Met Ala His Arg Leu Asn Thr Asn Lys Gln Phe Met Val
 1 5 10 15
 Gly Asn Gly Ile Leu Ala Phe Ala Val Ile Phe Val Val Val Ile Phe
 20 25 30
 Val Tyr Met Ser Leu Arg Leu Gln Arg Glu Lys Glu Ala Asn Arg His
 35 40 45
 Phe Ser Glu Thr Tyr Ser Ile Gln Leu Thr Lys Gly Phe Val Gly Asp
 50 55 60
 Ser Ile Ser Leu Phe Val Asn Asp Ser Leu Ile Met Asn Lys Gln Ile
 65 70 75 80
 Lys Glu Glu Pro Thr Ala Ile Glu Val Glu Arg Phe Ala Glu Gln Ser
 85 90 95
 Ala Leu Met Ile Val Asn Asn Gln Thr Glu Thr Val Ala Ala Phe Asp
 100 105 110
 Leu Ser Glu Lys Gly Gly Thr Tyr Arg Phe Glu Lys Asp Ile Asp Gly
 115 120 125
 Ile Lys Gln Leu Pro Gln Lys
 130 135

<210> 5483
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5483
 Lys Leu Ile Ile Trp Leu Ser Val Met Gly Cys Asn Thr Ile Val Ala
 1 5 10 15
 Gly Trp Ile Met Ile Leu Lys Val Ile Arg Phe Cys Arg Ile Phe Arg
 20 25 30
 Ile Met Thr Leu Tyr Lys Ile Asn Asn Val Asn Asp Ser Phe Arg His
 35 40 45
 Leu Leu Ser Ser Phe Gln Glu Val Asn Ile Val Asn Ala Arg Ser
 50 55 60

<210> 5484
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 5484

Cys Tyr Ser Ile Leu Phe Ile Ile Ser Val Ile Lys Ile Val Ile Cys
 1 5 10 15
 Phe Ile His Tyr Lys Asn Asn Asp Thr Phe Ala Glu Ile Asn Cys Glu
 20 25 30
 Lys Arg Met Val Met Ser Trp Gly Lys Thr Ile Leu Gly Cys Leu Ile
 35 40 45
 Gly Gly Tyr Ala Leu Leu Gly Leu Leu Gly Gly Asn Tyr Ala Tyr Glu
 50 55 60
 Gln Glu Val Lys Ala Leu His Val Tyr Ala Asp Ser Val Phe His Glu
 65 70 75 80
 Ala Phe His Val Glu Leu Gln Lys Arg Gly Met Asp Gln Val Glu Ser
 85 90 95
 Trp Arg Tyr Gly Cys Glu Asp Ser Phe Val Ser Ser Val Asp Thr Ala
 100 105 110
 Phe Lys Lys Val Thr Ile Gln Asp Glu Tyr Gly Thr Tyr Ser Phe Arg
 115 120 125
 Val Asp Ala Met Lys Ile Arg Lys Asn Ile Val Ser Ser Pro Gly Glu
 130 135 140
 Gln Gly Leu His Thr Val Val Val
 145 150

<210> 5485

<211> 125

<212> PRT

<213> B.fragilis

<400> 5485

Ala Met Asn Ile Glu Glu Phe Arg Glu Tyr Cys Leu Ser Phe Lys Gly
 1 5 10 15
 Val His Asp Arg Met Pro Phe Lys Lys Ala Thr Ser Glu Tyr Asp Arg
 20 25 30
 Asp Leu Leu Val Phe Tyr Val Met Asp Lys Trp Phe Cys Phe Val Asn
 35 40 45
 Ile Asp Ala Phe Asp Phe Cys Asn Ile Lys Cys Asn Ala Gly Gln Ile
 50 55 60
 Glu Asp Leu Leu Asp Lys Tyr Glu Gly Val Gln Pro Gly Tyr His Met
 65 70 75 80
 Asn Lys Lys His Trp Ile Ser Val Tyr Phe Asp Lys Asp Val Pro Asp
 85 90 95
 Lys Met Ile Lys Asp Leu Val Lys Gln Ser Tyr Glu Ile Val Val Ser
 100 105 110
 Ser Leu Ala Arg Arg Glu Arg Glu Ile Leu Gln Ala Met
 115 120 125

<210> 5486

<211> 247

<212> PRT

<213> B.fragilis

<400> 5486

Thr Ser Ile Phe Leu Leu Phe Cys Phe Leu Leu Pro Asn Ile Ala Ile
 1 5 10 15
 Ile Thr Thr Ile Thr Ile Thr Asn Asp Met Lys Asn Thr His Val Leu
 20 25 30
 Leu Ile Lys Phe Lys Asn Lys Ile Ser Asp Asp Glu Val Gln Phe Phe
 35 40 45
 Arg Ser Ser Ile Ile Gln Lys Leu Gly Asp Gln Pro Asp Ile Leu Tyr

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      50              55              60
His Asn His Val Glu Lys Asn Lys Tyr Arg Tyr Ser Tyr Pro Leu Ile
65              70              75              80
Gln Tyr Lys Asn Ile Glu Gln Gln Ala Thr Ile Val Cys Ile Asp Gln
      85              90              95
Gly Thr Lys Ala Ile Glu Lys Phe Phe Ser Gln Cys Asp Phe Asn Phe
      100             105             110
Gln Leu Gly Asn Arg Lys Val Asn Met Lys Phe Ala Ser Val Thr Pro
      115             120             125
Tyr Lys Leu Leu Ile Glu Arg Gln Ser Lys Met Ile Asn Tyr His Ile
      130             135             140
His Asn Trp Leu Pro Leu Asn Ser Asp Asn Tyr Lys Lys Tyr Gln Asn
145             150             155             160
Ile Ser Ile Leu Ser Glu Arg Ile Asn Phe Leu Glu Lys Ile Leu Ile
      165             170             175
Gly Asn Ile Leu Ser Phe Thr Lys Gly Val Asn Tyr Phe Ile Asp Phe
      180             185             190
Pro Leu Gln Cys Lys Leu Leu Gln Leu Ser Phe Ala Lys Leu Ile Ser
      195             200             205
Asn Lys Asn Ile Lys Leu Met Ser Phe Asp Ala Asp Phe Gln Cys Asn
      210             215             220
Leu Asn Leu Pro Asp Tyr Ile Gly Ile Gly Lys His Thr Ser Ile Gly
225             230             235             240
Tyr Gly Thr Ile Thr Arg Asn
      245

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<210> 5487

<211> 383

<212> PRT

<213> B.fragilis

<400> 5487

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Arg Leu Val Ile Met Lys Lys Leu Met Tyr Ile Phe Leu Ile Leu Pro
1              5              10              15
Leu Ile Met Ser Gly Cys Lys Gly Lys Lys Glu Thr Glu Arg Gly Gly
      20              25              30
Met Pro Thr Pro Glu Ile Ser Val Ala Tyr Pro Leu Val Gln Asn Ile
      35              40              45
Thr Leu Thr Lys Asp Tyr Pro Gly Tyr Leu Thr Thr Glu Gln Thr Val
      50              55              60
Asn Leu Val Ala Arg Val Asn Gly Ala Leu Gln Ser Ala Ser Phe Thr
65              70              75              80
Pro Gly Thr Arg Val Lys Gln Gly Gln Leu Leu Phe Val Ile Glu Pro
      85              90              95
Thr Ile Tyr Lys Asp Asn Val Thr Gln Ala Glu Ala Gln Leu Lys Thr
      100             105             110
Ala Leu Ala Gln Leu Glu Tyr Ala Arg Asn Asn Tyr Ser Arg Met Lys
      115             120             125
Glu Ala Leu Lys Ser Asp Ala Val Ser Arg Ile Gln Val Leu Gln Ala
      130             135             140
Glu Ser Asn Val Ala Glu Ala Thr Ala Ala Val Ser Asn Ala Glu Ala
145             150             155             160
Thr Leu Asn Thr Ala His Thr Asn Leu Gly Tyr Cys Tyr Ile Arg Ala
      165             170             175
Pro Phe Asn Gly Thr Val Ser Arg Ser Leu Tyr Asp Val Gly Ser Tyr
      180             185             190
Ile Ser Gly Ala Ala Gln Pro Val Thr Leu Ala Thr Ile Tyr Lys Asp
      195             200             205
Asp Arg Met Tyr Thr Tyr Phe Asn Val Ala Asp Asn Gln Trp Leu Ser

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210	215	220
Met Leu Leu Ser Gln Asn Gly Lys Glu Lys Glu Leu Pro Lys Asn Val		
225	230	235
Ile Val Arg Leu Gly Glu Asn Gly Thr Gln Asn Tyr Pro Ala Thr Leu		240
	245	250
Asp Tyr Leu Ser Pro Asn Val Asp Leu Asn Thr Gly Thr Leu Asn Val		255
	260	265
Arg Ala Asn Leu Asp Asn Pro Lys Gly Ile Leu Lys Ser Gly Leu Tyr		270
	275	280
Val Ser Ile Thr Leu Pro Tyr Ala Glu Ala Lys Gln Ala Val Leu Val		285
	290	295
Pro Glu Ala Ser Ile Gly Thr Asp Gln Leu Gly Lys Tyr Leu Tyr Ile		300
305	310	315
Val Asn Asp Ser Asn Ile Val Arg Tyr Arg His Ile Glu Pro Gly Gln		320
	325	330
Leu Val Asn Asp Thr Leu Arg Gln Ile Lys Ser Gly Leu Ser Pro Lys		335
	340	345
Glu Gln Tyr Val Thr Thr Ala Leu Met Lys Val Arg Asp Gly Met Lys		350
	355	360
Val Lys Pro Val Ser Val Asn His Glu Ser Pro Thr Ser Asn Arg		365
370	375	380

<210> 5488

<211> 412

<212> PRT

<213> B.fragilis

<400> 5488

His Ile Cys Ile Ile Glu Cys Tyr Ile His Ala Asn Asp Phe His Ile		
1	5	10
Thr Phe Tyr Lys Phe Ala Leu Asn Met Lys Thr Gln Phe Phe Thr Leu		15
	20	25
Phe Phe Thr Ile Ile Cys Leu Ser Leu Gln Ala Gln Gln Pro Cys Ile		30
	35	40
Ile Glu Gly Asn Ile Asn Gly Ile Pro Asp Gly Thr Val Ile Ser Met		45
	50	55
Met Arg Gln Gln Gly Thr Gly Met Lys Arg Ile Ala Asn Asp Thr Ile		60
65	70	75
Asp Asn Gly Lys Phe Lys Phe Ile Ile His Thr Leu Asn Asn Gln Thr		80
	85	90
Glu Ala Leu Arg Ile Val Ser Lys Gly Glu Gly Phe Pro Asn Thr Trp		95
	100	105
Leu Asp Val Tyr Ala Ser Pro Gly Glu Thr Val Ser Ile Ile Gly Ser		110
	115	120
Asp Lys Leu Leu Arg Thr Trp Asn Ile Val Ser Asn Ile Lys Glu Gln		125
130	135	140
Gln Glu Glu Asn Gln Tyr Thr Asn Glu Gly Phe Arg Asn Leu Thr Asp		145
145	150	155
Gln Arg Gln Arg Leu Gln Ala Leu Ser Ser Asp Met Trp Lys Lys Ile		160
	165	170
Ala Ile Ser Asp Ser Pro Lys Glu Lys Ile Gln Met Thr Asp Ser Ile		175
	180	185
Gln Asn Ile Leu Tyr Pro Gln Leu Asp Ser Leu Glu Leu Leu Ser		190
	195	200
Lys Glu Glu Ile Asn Leu Met Lys Asn Leu Pro Val Thr Ser Ile Trp		205
210	215	220
Leu Asp His Leu Glu Ala Leu Ser Arg Gln Ser Val Tyr Leu Lys Gly		
225	230	235
Phe Pro Ile Ser Glu Ala Gln Val Leu Tyr Gln Gln Leu Thr Ser Thr		240

<212> PRT

<213> B.fragilis

<400> 5490

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Thr Val Leu Ile Leu Ile Ile Leu Glu Tyr Ile Tyr Ile Leu Met Leu
1           5           10           15
Trp Ser Val Leu Cys Gln Arg Gly Arg Ser Leu Asn Pro Tyr Tyr Thr
          20           25           30
Gly Ile His Leu His Lys Asp Glu Asn Gly Tyr Tyr Ile Lys Ser Val
          35           40           45
Thr Arg Leu Asn Pro Tyr Tyr Thr Gly Ile His Leu His Leu Asn Arg
          50           55           60
Ala Ala Lys Lys Leu Asn Cys Phe Cys Leu Asn Pro Tyr Tyr Thr Gly
65           70           75           80
Ile His Leu His Glu Lys Glu Lys Asp Glu Val Gly Glu Met Thr Ser
          85           90           95
Leu Asn Pro Tyr Tyr Thr Gly Ile His Leu His Cys Leu Cys Ser Ile
          100          105          110
Arg Glu Glu Gly Tyr Arg Arg Leu Asn Pro Tyr Tyr Thr Gly Ile His
          115          120          125
Leu His Ile Thr Cys Leu Gly Ser Tyr Leu Ser Cys Ile Val Ser
          130          135          140

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<210> 5491

<211> 94

<212> PRT

<213> B.fragilis

<400> 5491

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Gln Val Leu Ile Leu Ile Ile Leu Glu Tyr Ile Tyr Ile Val Cys Val
1           5           10           15
Pro Ser Val Lys Lys Ala Ile Gly Val Leu Ile Leu Ile Ile Leu Glu
          20           25           30
Tyr Ile Tyr Ile Leu Leu Val Trp Ala Val Ile Cys Leu Val Ser Cys
          35           40           45
Leu Asn Pro Tyr Tyr Thr Gly Ile His Leu His Val Thr Ile Asn Asn
          50           55           60
Gln Asp Met Gly Leu Gly Val Leu Ile Leu Ile Leu Glu Tyr Ile
65           70           75           80
Tyr Met Asn Ser Asp Ile Leu Tyr Arg Thr Pro His Val Ser
          85           90

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<210> 5492

<211> 139

<212> PRT

<213> B.fragilis

<400> 5492

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Lys Leu Glu Met Lys Ile Ser Lys Lys Gln Ile Glu Tyr Ala Ile Glu
1           5           10           15
Ala Leu Arg Ala Asn Asn Ile Ile Thr Asn Asp Asn Gln Tyr Pro Lys
          20           25           30
Val Phe Lys Gly Tyr Ile Ser Ser Phe Gly Ala Ala Val Ile Gln Ser
          35           40           45
Gly Leu Ile Pro Ala Ile Ile Phe Phe Glu Asn Glu Asp Asn Asp Ala
          50           55           60
Asn Ala Asp Arg His Lys Ile Ile Gly Val Leu Lys Asp Ile Ile Asn
65           70           75           80
Ala Met Arg Gln Gln Tyr Thr Val Thr Asp Ala Thr Ile Leu Val Ser

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				85					90					95			
Ser	Gln	Ile	Pro	Ala	Asn	Tyr	Ser	Met	Ala	Gln	Tyr	Ile	Ile	Glu	His		
			100					105					110				
Gly	Asn	Thr	Asp	Gln	Leu	Leu	Lys	Glu	Ile	Thr	Glu	Ala	Ala	Val	Ala		
		115					120					125					
Met	Lys	Leu	Ala	Leu	Arg	Met	Tyr	Lys	Ser	Glu							
	130					135											

<210> 5493

<211> 749

<212> PRT

<213> B.fragilis

<400> 5493

Asn	Glu	Glu	Ile	Asn	Ile	Ser	Met	Ile	Leu	His	Tyr	Leu	Lys	Ile	Val		
1				5				10					15				
Phe	Arg	Gln	Met	Ala	Lys	Arg	Lys	Val	Gln	Thr	Ala	Ile	Ser	Ile	Leu		
		20					25					30					
Gly	Ile	Thr	Ala	Gly	Leu	Leu	Cys	Phe	Ser	Val	Cys	Asn	Tyr	Tyr	Asn		
	35						40				45						
Arg	Ile	Phe	Ser	Thr	Gly	Asn	Lys	Asp	Leu	Ala	Thr	Tyr	Glu	Asn	Gln		
	50					55					60						
Ala	Glu	Ile	Cys	Ile	Lys	Glu	Arg	Ser	Tyr	Gln	Val	Asn	Ile	Pro	Ile		
65					70					75					80		
Glu	Asp	Phe	Glu	Lys	Lys	Ile	Gly	Lys	Asp	Lys	Phe	Glu	Ala	Val	Ala		
				85				90				95					
Phe	Tyr	Val	Asn	Ser	Ser	Ser	Thr	Ile	Thr	Leu	Asp	Glu	Thr	Ile	Tyr		
		100						105				110					
Cys	Lys	Val	Asp	Lys	Thr	Glu	Cys	Asn	Ala	Asp	Tyr	Phe	Lys	Val	Phe		
	115						120				125						
Pro	Thr	Glu	Cys	Ile	Asp	Gly	Ser	Leu	Lys	Gln	Phe	Gly	Ile	Ser	Gly		
	130					135					140						
Asn	Glu	Ala	Val	Val	Thr	Thr	Glu	Phe	Val	Lys	Gln	Phe	Cys	Gly	Gly		
145					150					155					160		
Val	Pro	Pro	Leu	Gly	Lys	Thr	Ile	Leu	Asn	Gln	Arg	Gly	Lys	Ile	His		
			165					170						175			
Thr	Ile	Ile	Ala	Val	Ile	Lys	Pro	Tyr	Pro	Ala	Gly	Met	Asn	Asn	Tyr		
	180							185					190				
His	Ser	Ser	Tyr	Asp	Val	Phe	Leu	Pro	Leu	Pro	Glu	Asn	Ala	Ser	Phe		
	195						200				205						
Gly	Ile	His	Lys	Leu	Leu	Leu	Lys	Arg	Pro	Glu	Asp	Ala	Glu	His	Ile		
	210					215				220							
Ser	Gln	Leu	Leu	Pro	Lys	Leu	Gly	Leu	Phe	Pro	Asn	His	Pro	Glu	Trp		
225				230					235					240			
Ile	Pro	Gln	Ile	Val	Leu	Asp	Ser	Gln	Thr	Glu	His	Lys	Ala	Gly	Ala		
		245						250					255				
Glu	Leu	Trp	Val	Ala	Ile	Leu	Gly	Leu	Leu	Val	Leu	Leu	Val	Gly	Met		
	260						265					270					
Ile	Asn	Tyr	Phe	Ser	Phe	Ser	Ile	Gly	Ala	Phe	Ala	Asn	Arg	Tyr	Lys		
	275						280				285						
Glu	Ile	Ser	Leu	Arg	Asn	Thr	Leu	Gly	Ser	Thr	Tyr	Trp	Gly	Leu	Phe		
	290					295					300						
Ile	Leu	Leu	Phe	Leu	Glu	Gln	Ala	Val	Ile	Ile	Leu	Ile	Cys	Gly	Ile		
305				310					315					320			
Ile	Thr	Leu	Ala	Ile	Thr	Glu	Ser	Leu	Leu	Pro	Trp	Phe	Ile	Ser	Thr		
			325					330					335				
Phe	Ser	Asn	Glu	Ile	Gln	Arg	Asn	Leu	Tyr	Ile	Asp	Ile	His	Arg	Leu		
	340						345					350					
Trp	Val	Tyr	Glu	Cys	Gln	Tyr	Ile	Gly	Gly	Leu	Leu	Leu	Ile	Ser	Leu		

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      355              360              365
Leu Ile Ser Phe Ile Ser Ser Trp His Ile Ala His Lys Thr Ile Ala
  370              375              380
Gln Gly Leu Arg Gly Gly Thr Thr Thr Gly Gln Arg His Ile Ile Arg
 385              390              395              400
Asn Thr Leu Leu Ser Val Gln Leu Leu Phe Ser Phe Leu Phe Ile Val
      405              410              415
Gly Thr Val Gly Ile Arg Met Gln Met Lys Glu Tyr Asp Leu Ser Ala
      420              425              430
Asn Pro Asn Leu Ser Thr Glu Val Lys Lys Glu Ile Met Val Val Asn
      435              440              445
Ile Gly Arg Tyr Asp Arg Ile Arg Glu His Gln Pro Glu Leu Ile Asn
 450              455              460
Phe Leu Arg Ser Arg Arg Trp Asn Ala Glu Thr Ala Tyr Thr Asn Arg
 465              470              475              480
Asp Tyr Ser Gln Glu Tyr Gly Phe Thr Glu Leu Cys Phe Val Ser Asp
      485              490              495
Asp Tyr Phe Asn Leu Met Asn Ile Lys Cys His His Lys Pro Gly Glu
      500              505              510
Pro Phe Cys Tyr Val Asn Glu Gln Leu Tyr Gln Thr Leu Gln Ala Asp
      515              520              525
Ser Thr Ser Glu Ser Phe Arg Phe Gln Asn Gln Val Tyr Pro Val Lys
 530              535              540
Gly Leu Val His Ile Gly Pro Asp Ser Pro Ser Ala Lys Gln Leu Ala
 545              550              555              560
Leu Leu Pro Leu Ser Ala Met Asn Asp Glu Ile Gly Lys Ile Tyr Ile
      565              570              575
Arg Leu Val Pro Asp Ala Pro Arg Lys Glu Val Lys Ala Glu Met Ser
      580              585              590
Lys Glu Met Asn Gln Tyr Leu Pro Gln Asn Glu Pro Phe Glu Phe Ile
      595              600              605
Ser Leu Tyr Glu Glu Gln Thr Gly Leu Gly Thr Ile Ser Val Met Trp
 610              615              620
Leu Phe Val Val Cys Ser Ser Ile Cys Leu Val Ile Thr Val Leu Gly
 625              630              635              640
Val Tyr Gly Ala Ile Ser Ile Asp Thr Ile Arg Lys Gln Lys Glu Val
      645              650              655
Ala Ile Arg Lys Ile Asn Gly Ala Arg Leu Pro Asp Ile Tyr Trp Leu
      660              665              670
Phe Ala Lys Asn Tyr Leu Ile Leu Phe Leu Ile Ala Ser Val Val Gly
      675              680              685
Gly Leu Ile Ser Leu Phe Val Met Val Ile Gly Ser Gln His Arg Val
 690              695              700
Ile Leu Phe Asp Tyr Ala Asp Pro Trp Leu Trp Met Gly Pro Leu Met
 705              710              715              720
Leu Leu Ile Gly Ile Ile Thr Ala Thr Ile Ser Trp Gln Ile Tyr Tyr
      725              730              735
Ile Ala Arg Thr Asn Pro Ala Glu Val Ile Lys Asn Glu
      740              745

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<210> 5494

<211> 141

<212> PRT

<213> B.fragilis

<400> 5494

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Cys Cys Gly Ile Lys Asp Lys Tyr Leu Arg Ser Glu Ser Ala Leu Met
1              5              10              15
Thr Leu Leu Gly Ile Val Ser Ile Val Cys Val Ile Ile Ser Ile Phe

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290 295 300
 Asp Lys Ala Ala Glu Phe Val Leu Gln Gly Lys Thr Ile Gln Asp Tyr
 305 310 315 320
 Leu Pro Thr Glu Val Arg Leu Arg Ala Ser Leu
 325 330

<210> 5496
 <211> 228
 <212> PRT
 <213> B.fragilis

<400> 5496
 Lys Ile Thr Ile Met Ile Lys Thr Ile Asn Leu Gln Lys Ile Phe Lys
 1 5 10 15
 Thr Glu Glu Val Glu Thr Trp Ala Leu Asn Asn Val Ser Val Glu Val
 20 25 30
 Lys Glu Gly Glu Phe Val Ala Ile Met Gly Pro Ser Gly Cys Gly Lys
 35 40 45
 Ser Thr Leu Leu Asn Ile Leu Gly Leu Leu Asp Asn Pro Thr Gly Gly
 50 55 60
 Glu Tyr Tyr Leu Asn Gly Lys Glu Val Ser Lys Tyr Thr Glu Ser Gln
 65 70 75 80
 Arg Thr Asn Leu Arg Lys Gly Val Ile Gly Phe Val Phe Gln Ser Phe
 85 90 95
 Asn Leu Ile Asp Glu Leu Asn Val Tyr Glu Asn Ile Glu Leu Pro Leu
 100 105 110
 Leu Tyr Met Gly Ile Pro Ala Ser Glu Arg Lys Gln Arg Val Glu Lys
 115 120 125
 Ala Met Glu Arg Met Ala Ile Thr His Arg Ser Lys His Phe Pro Gln
 130 135 140
 Gln Leu Ser Gly Gly Gln Gln Gln Arg Val Ala Ile Ala Arg Ala Val
 145 150 155 160
 Val Ala Asn Pro Lys Leu Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu
 165 170 175
 Asp Ser Lys Asn Gly Lys Glu Val Met Gly Leu Leu Ser Glu Leu Asn
 180 185 190
 Lys Glu Gly Thr Thr Ile Val Met Val Thr His Ser Gln His Asp Ala
 195 200 205
 Gly Phe Ala Asp Arg Val Ile Asn Leu Phe Asp Gly Gln Val Val Thr
 210 215 220
 Glu Val Thr Ile
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<210> 5497
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 5497
 Arg Tyr Thr Met Leu Gln Ile Asp Asn Ala Cys Ile Ala Phe Gly Glu
 1 5 10 15
 Asp Ile Leu Phe Ser Glu Phe Cys Met Arg Leu Asn Lys Gly Glu Thr
 20 25 30
 Ala Cys Ile Ala Gly Gln Ser Gly Arg Gly Lys Thr Ser Leu Leu Asn
 35 40 45
 Ala Ile Met Gly Phe Val Pro Leu Arg Lys Gly Lys Ile Lys Val Gly
 50 55 60
 Gly Ile Leu Leu Glu Pro Thr Thr Ile Asp Ala Ile Arg Arg His Ile
 65 70 75 80

Ala Trp Ile Pro Gln Glu Leu Ala Leu Pro Ser Glu Trp Val Lys Glu
85 90 95
Met Ile Ser Leu Pro Phe Ala Leu Lys Ala Asn Arg His Ile Ser Phe
100 105 110
Ser Lys Glu Lys Leu Phe Thr Cys Phe Asp Glu Leu Gly Leu Asp Lys
115 120 125
Glu Leu Tyr Gln Lys Arg Val Gly Glu Ile Ser Gly Gly Gln Arg Gln
130 135 140
Arg Ile Met Ile Ala Val Ala Ala Met Leu Glu Lys Pro Leu Ile Ile
145 150 155 160
Val Asp Glu Pro Thr Ser Ala Leu Asp Ala Gly Ser Thr Asp Lys Val
165 170 175
Leu Ala Phe Phe Arg Asn Gln Ala Glu Lys Gly Thr Ala Ile Leu Ala
180 185 190
Val Ser His Asp Arg Thr Phe Ala Tyr Gly Cys Asn Gln Leu Ile Thr
195 200 205
Leu

<210> 5498
<211> 170
<212> PRT
<213> B.fragilis

<400> 5498
Thr Leu Tyr Phe Cys Glu Ser Thr Asn Lys Ser Tyr Ile Cys Lys Ser
1 5 10 15
Ser Lys Asp Met Glu Ile Lys Asp Arg Ile Lys Ile Ile Met Glu Lys
20 25 30
Glu Asn Met Ala Ser Gly Ala Phe Ala Glu Ser Ile Gly Ile Gln Gln
35 40 45
Ser Thr Leu Ser His Ile Leu Asn Gly Arg Asn Asn Pro Ser Leu Asp
50 55 60
Val Ile Met Lys Val His Gln Lys Tyr Asn Tyr Val Lys Leu Glu Trp
65 70 75 80
Leu Leu Tyr Gly Gln Gly Asn Ile Ser Glu Glu Ser Ile Gln Ser Ala
85 90 95
Ser Asp Phe Gln Pro Ser Leu Phe Ala Glu Asn Ala Ile Ile Pro Pro
100 105 110
Asn Gly Thr Val Thr Pro Glu Asn Arg Arg Glu Met Pro Leu Glu Ser
115 120 125
Ser Gln Asn Thr Pro Lys Glu Ile Val Lys Gln Glu Ile Arg Tyr Ile
130 135 140
Glu Lys Pro Ser Arg Lys Ile Thr Glu Ile Arg Ile Phe Phe Asp Asp
145 150 155 160
Asn Thr Tyr Glu Thr Phe Arg Gly Glu Lys
165 170

<210> 5499
<211> 62
<212> PRT
<213> B.fragilis

<400> 5499
Phe Ile Phe Val Lys Tyr Pro Pro Ser Met Asn Ile Pro Ile Asp Val
1 5 10 15
Ile Asp Ser Ile Ile Phe Gly Leu Phe Cys Ile Ser Phe Glu Leu Ser
20 25 30
Tyr His Ile Gln Cys Leu Tyr Val Cys Leu Phe Gln Tyr Asn Pro Glu

35 40 45
 Asp Leu Asp Tyr Ile Gly Asn Leu His Gln Thr Thr Leu Ile
 50 55 60

<210> 5500
 <211> 686
 <212> PRT
 <213> B.fragilis

<400> 5500

Lys Ile Tyr Val Ile Met Gln Lys Gly Asn Ile Gly Val Thr Thr Glu
 1 5 10 15
 Asn Ile Phe Pro Ile Ile Lys Lys Phe Leu Tyr Ser Asp His Glu Ile
 20 25 30
 Phe Leu Arg Glu Leu Val Ser Asn Ala Val Asp Ala Thr Gln Lys Leu
 35 40 45
 Asn Thr Leu Ala Ser Ile Ser Glu Phe Lys Gly Glu Leu Gly Asp Leu
 50 55 60
 Thr Val His Val Ser Leu Gly Lys Asp Thr Ile Thr Ile Ser Asp Arg
 65 70 75 80
 Gly Ile Gly Leu Thr Ala Glu Glu Ile Asp Lys Tyr Ile Asn Gln Ile
 85 90 95
 Ala Phe Ser Gly Ala Asn Asp Phe Leu Glu Lys Tyr Lys Asn Asp Ala
 100 105 110
 Asn Ala Ile Ile Gly His Phe Gly Leu Gly Phe Tyr Ser Ala Phe Met
 115 120 125
 Val Ser Lys Lys Val Glu Ile Ile Thr Lys Ser Tyr Lys Glu Gly Ala
 130 135 140
 Gln Ala Val Lys Trp Thr Cys Asp Gly Ser Pro Glu Phe Thr Leu Glu
 145 150 155 160
 Glu Val Glu Lys Ala Asp Arg Gly Thr Asp Ile Val Leu Tyr Ile Asp
 165 170 175
 Asp Asp Cys Lys Glu Phe Leu Glu Glu Ser Arg Ile Ser Ala Leu Leu
 180 185 190
 Lys Lys Tyr Cys Ser Phe Leu Pro Val Pro Ile Ala Phe Gly Lys Lys
 195 200 205
 Lys Glu Trp Lys Asp Gly Lys Gln Val Glu Thr Ala Glu Asp Asn Val
 210 215 220
 Ile Asn Asp Thr Ile Pro Leu Trp Thr Lys Lys Pro Ser Glu Leu Ser
 225 230 235 240
 Asp Glu Asp Tyr Lys Lys Phe Tyr Arg Glu Leu Tyr Pro Met Ser Asp
 245 250 255
 Glu Pro Leu Phe Trp Ile His Leu Asn Val Asp Tyr Pro Phe His Leu
 260 265 270
 Thr Gly Ile Leu Tyr Phe Pro Lys Val Lys Ser Asn Ile Asp Leu Asn
 275 280 285
 Lys Asn Lys Ile Gln Leu Tyr Cys Asn Gln Val Tyr Val Thr Asp Ser
 290 295 300
 Val Glu Gly Ile Val Pro Asp Phe Leu Thr Leu Leu His Gly Val Leu
 305 310 315 320
 Asp Ser Pro Asp Ile Pro Leu Asn Val Ser Arg Ser Tyr Leu Gln Ser
 325 330 335
 Asp Ser Asn Val Lys Lys Ile Ser Thr Tyr Ile Ser Lys Lys Val Ser
 340 345 350
 Asp Arg Leu Gln Ser Ile Phe Lys Asn Asp Arg Ala Gln Phe Glu Glu
 355 360 365
 Lys Trp Asn Asp Leu Lys Ile Phe Ile Asn Tyr Gly Met Leu Thr Gln
 370 375 380
 Glu Asp Phe Tyr Asp Lys Ala Gln Lys Phe Ala Leu Phe Thr Asp Thr

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385          390          395          400
Asp Gly Lys His Tyr Thr Phe Glu Glu Tyr Gln Thr Leu Ile Lys Asp
      405          410          415
Asn Gln Thr Asp Lys Asp Lys Asn Leu Ile Tyr Leu Tyr Ala Asn Asn
      420          425          430
Lys Asp Glu Gln Phe Ala Tyr Ile Glu Ala Ala Lys Asn Lys Gly Tyr
      435          440          445
Asn Val Leu Leu Met Asp Gly Gln Leu Asp Val Ala Met Val Ser Met
      450          455          460
Leu Glu Gln Lys Leu Glu Lys Ser Arg Phe Thr Arg Val Asp Ser Asp
465          470          475          480
Val Val Asp Asn Leu Ile Val Lys Glu Asp Lys Lys Ser Asp Val Leu
      485          490          495
Glu Ala Ser Lys Gln Glu Ala Leu Ser Ala Ala Phe Lys Ser Gln Leu
      500          505          510
Pro Lys Met Glu Lys Val Glu Phe Asn Val Met Thr Gln Ala Leu Gly
      515          520          525
Glu Asn Gly Ser Pro Val Met Ile Thr Gln Ser Glu Tyr Met Arg Arg
      530          535          540
Met Lys Glu Met Ala Asn Ile Gln Ala Gly Met Ser Phe Tyr Gly Glu
545          550          555          560
Met Pro Asp Met Phe Asn Leu Val Leu Asn Ser Asp His Lys Leu Val
      565          570          575
Lys Glu Val Leu Ala Asp Glu Glu Lys Glu Cys Ser Ala Ala Ile Ala
      580          585          590
Pro Ile Gln Thr Glu Leu Glu Asp Val Thr Lys Arg Arg Asp Ala Leu
      595          600          605
Lys Lys Lys Gln Glu Gly Lys Lys Asp Glu Asp Ile Pro Thr Ala Glu
      610          615          620
Lys Asp Glu Leu Asn Asp Leu Asp Lys Lys Trp Asp Glu Leu Lys Gln
625          630          635          640
Gln Lys Asp Ser Ile Phe Ala Gly Tyr Ala Gly Lys Asn Lys Val Val
      645          650          655
Arg Gln Leu Ile Asp Leu Ala Leu Leu Gln Asn Asn Met Leu Lys Gly
      660          665          670
Glu Ala Leu Asn Asn Phe Val Lys Arg Ser Ile Glu Leu Ile
      675          680          685

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<210> 5501

<211> 133

<212> PRT

<213> B.fragilis

<400> 5501

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Asn His Ser Val Lys Lys Glu Trp Glu Leu Ser Arg Ile Ser Asn Ile
1          5          10          15
Thr Asn Gln Lys Ser Met Lys Lys Tyr Ile Leu Ser Ser Leu Thr Ile
      20          25          30
Thr Phe Leu Leu Leu Ser Ile Thr Ala Cys Ser Gln Gly Lys Gln Ile
      35          40          45
Ser Gly Ser Ser Asn Tyr Ile Thr Lys Asn Ile Lys Val Gly Ser Phe
      50          55          60
Asp Gln Ile Lys Ser Met Ser Ser Ser Asp Ile Val Tyr Thr Gln Lys
65          70          75          80
Gln Gly Ala Pro Thr Val Gln Ile Tyr Gly Pro Asp Asn Ile Val Glu
      85          90          95
Leu Met Glu Thr Ser Val Ser Gly Arg Thr Leu Thr Ile Lys Phe Lys
      100          105          110
Lys Asn Thr Ser Ile Arg Asn Ser Gly Lys Leu Glu Ile Arg Val Ser

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115
Ser Pro Ser Leu Thr
130

120

125

<210> 5502
<211> 303
<212> PRT
<213> B.fragilis

<400> 5502
Arg Leu Leu Leu Ile Leu Met Ile Gln Thr Arg Leu Lys Gly Met Gly
1 5 10 15
Val Ala Leu Ile Thr Pro Phe Lys Glu Asp Glu Ser Val Asp Tyr Asp
20 25 30
Ala Leu Met Arg Leu Val Asp Tyr Leu Leu Gln Asn Asn Ala Asp Phe
35 40 45
Leu Cys Val Leu Gly Thr Thr Ala Glu Thr Pro Thr Leu Ser Glu Glu
50 55 60
Glu Lys Lys Lys Ile Lys Lys Met Val Ile Asp Arg Val Asn Gly Arg
65 70 75 80
Ile Pro Ile Leu Leu Gly Val Gly Ser Asn Asn Thr Arg Ala Val Val
85 90 95
Glu Thr Leu Lys Asn Asp Asp Phe Thr Gly Val Asp Ala Ile Leu Ser
100 105 110
Val Val Pro Tyr Tyr Asn Lys Pro Ser Gln Glu Gly Ile Tyr Gln His
115 120 125
Tyr Lys Ala Ile Ala Ser Ala Thr Glu Leu Pro Ile Val Leu Tyr Asn
130 135 140
Val Pro Gly Arg Thr Gly Val Asn Met Thr Ala Glu Thr Thr Leu Arg
145 150 155 160
Ile Ala Lys Asp Phe Gln Asn Val Ile Ala Ile Lys Glu Ala Ser Gly
165 170 175
Asn Ile Thr Gln Met Asp Asp Ile Ile Lys Asn Lys Pro Ala Asn Phe
180 185 190
Asp Val Ile Ser Gly Asp Asp Gly Ile Thr Phe Pro Leu Ile Thr Leu
195 200 205
Gly Ala Val Gly Val Ile Ser Val Ile Gly Asn Ala Phe Pro Arg Glu
210 215 220
Phe Ser Arg Met Thr Arg Leu Ala Leu Gln Gly Asp Phe Ala Asn Ala
225 230 235 240
Leu Thr Ile His His Lys Phe Thr Glu Leu Phe Asn Leu Leu Phe Val
245 250 255
Asp Gly Asn Pro Ala Gly Val Lys Ser Met Leu Asn Ala Met Gly Met
260 265 270
Ile Glu Asn Lys Leu Arg Leu Pro Leu Val Pro Thr Arg Ile Thr Thr
275 280 285
Phe Glu Ala Ile Arg Lys Val Leu Asn Glu Leu Asn Ile Lys Cys
290 295 300

<210> 5503
<211> 745
<212> PRT
<213> B.fragilis

<400> 5503
Lys Asp Ala Phe Leu Gln Pro Arg Gly Glu Tyr Val Leu Leu Ala Ile
1 5 10 15
Leu Lys Asp Lys Asp Asn Leu Ala Ala Thr Val Leu Glu Ala Asn His
20 25 30

Val Asn Tyr Gln Gln Val Phe Glu Gln Leu Ser Leu Gln Pro Asp Ile
 35 40 45
 Ser Ala Gly Met Gly Phe Thr Glu Asp Asp Asp Asp Glu Glu Glu Met
 50 55 60
 Asn Gln Ser Arg Ser Ser His Gly Ser Gly Glu Arg Gln Gln Gln Ala
 65 70 75 80
 Gln Thr Ala Ser Arg Lys Pro Thr Asn Asp Thr Pro Val Leu Asp Asn
 85 90 95
 Phe Gly Thr Asp Met Thr Lys Ala Ala Glu Glu Gly Arg Leu Asp Pro
 100 105 110
 Val Val Gly Arg Glu Arg Glu Ile Glu Arg Leu Ala Gln Ile Leu Ser
 115 120 125
 Arg Arg Lys Lys Asn Asn Pro Ile Leu Ile Gly Glu Pro Gly Val Gly
 130 135 140
 Lys Ser Ala Ile Val Glu Gly Leu Ala Leu Arg Ile Ile Gln Lys Lys
 145 150 155 160
 Val Ser Arg Ile Leu Phe Asp Lys Arg Val Val Ala Leu Asp Met Thr
 165 170 175
 Ala Val Val Ala Gly Thr Lys Tyr Arg Gly Gln Phe Glu Glu Arg Ile
 180 185 190
 Arg Ser Ile Leu Asn Glu Leu Gln Lys Asn Pro Asn Val Ile Leu Phe
 195 200 205
 Ile Asp Glu Ile His Thr Ile Val Gly Ala Gly Ser Ala Ala Gly Ser
 210 215 220
 Met Asp Ala Ala Asn Met Leu Lys Pro Ala Leu Ala Arg Gly Glu Ile
 225 230 235 240
 Gln Cys Ile Gly Ala Thr Thr Leu Asp Glu Tyr Arg Lys Asn Ile Glu
 245 250 255
 Lys Asp Gly Ala Leu Glu Arg Arg Phe Gln Lys Val Met Val Glu Pro
 260 265 270
 Thr Thr Ala Asp Glu Thr Leu Gln Ile Leu Arg Asn Ile Lys Asp Lys
 275 280 285
 Tyr Glu Asp His His Asn Val Asn Tyr Thr Asp Ala Ala Leu Glu Ala
 290 295 300
 Cys Val Lys Leu Thr Asp Arg Tyr Ile Thr Asp Arg Asn Phe Pro Asp
 305 310 315 320
 Lys Ala Ile Asp Ala Leu Asp Glu Ala Gly Ser Arg Val His Leu Thr
 325 330 335
 Asn Val Ser Val Pro Lys Glu Ile Glu Asp Gln Glu Lys Leu Ile Glu
 340 345 350
 Glu Ala Lys Asn Asn Lys Asn Glu Ala Val Lys Ser Gln Asn Phe Glu
 355 360 365
 Leu Ala Ala Ser Phe Arg Asp Lys Glu Lys Glu Leu Ala Val Gln Leu
 370 375 380
 Asp Val Met Lys Lys Asp Trp Glu Glu Arg Leu Lys Asp Asn Arg Glu
 385 390 395 400
 Thr Val Asp Glu Glu Glu Ile Ala Asn Val Val Ser Met Met Ser Gly
 405 410 415
 Ile Pro Val Gln Arg Met Ala Gln Ala Glu Gly Ile Lys Leu Ala Gly
 420 425 430
 Met Lys Glu Asp Leu Gln Ser Lys Val Ile Ala Gln Asp Asp Ala Ile
 435 440 445
 Lys Lys Leu Val Lys Ala Ile Leu Arg Ser Arg Val Gly Leu Lys Asp
 450 455 460
 Pro Asn Lys Pro Ile Gly Thr Phe Met Phe Leu Gly Pro Thr Gly Val
 465 470 475 480
 Gly Lys Thr His Leu Ala Lys Glu Leu Ala Lys Tyr Met Phe Gly Ser
 485 490 495
 Ser Asp Ala Leu Ile Arg Ile Asp Met Ser Glu Phe Met Glu Lys Phe

500	505	510
Thr Val Ser Arg Leu Val Gly Ala Pro Pro Gly Tyr Val Gly Tyr Glu		
515	520	525
Glu Gly Gly Gln Leu Thr Glu Lys Val Arg Arg Lys Pro Tyr Ser Ile		
530	535	540
Val Leu Leu Asp Glu Ile Glu Lys Ala His Pro Asp Val Phe Asn Leu		
545	550	555
Leu Leu Gln Val Met Asp Glu Gly Arg Leu Thr Asp Ser Tyr Gly Arg		
565	570	575
Met Val Asp Phe Lys Asn Thr Val Ile Ile Met Thr Ser Asn Ile Gly		
580	585	590
Thr Arg Gln Leu Lys Glu Phe Gly Arg Gly Val Gly Phe Ala Thr Gln		
595	600	605
Ser Arg Leu Asp Asp Lys Glu Phe Ser Arg Ser Val Ile Gln Lys Ala		
610	615	620
Leu Asn Lys Ser Phe Ala Pro Glu Phe Ile Asn Arg Val Asp Glu Ile		
625	630	635
Ile Thr Phe Asp Gln Leu Ser Leu Glu Ala Ile Thr Lys Ile Ile Asp		
645	650	655
Ile Glu Leu Lys Gly Leu Tyr Asn Arg Ile Glu Ser Ile Gly Tyr Lys		
660	665	670
Leu Val Ile Glu Asp Lys Ala Lys Gln Phe Val Ala Ser Lys Gly Tyr		
675	680	685
Asp Val Gln Tyr Gly Ala Arg Pro Leu Lys Arg Ala Ile Gln Thr Tyr		
690	695	700
Leu Glu Asp Gly Leu Ser Glu Leu Ile Ile Ser Ala Asp Leu Asn Glu		
705	710	715
Gly Asp Thr Ile Thr Val Ser Leu Asn Glu Glu Lys Gly Glu Leu Glu		
725	730	735
Met Lys Asn Glu Ala Lys Thr Ala Glu		
740	745	

<210> 5504

<211> 238

<212> PRT

<213> B.fragilis

<400> 5504

Ser Lys Ser Ser Gly Leu Tyr Trp Asn Arg Gln Thr Tyr Lys His Trp	
1	5
Ile Trp Tyr Asp Asn Ser Lys Leu Ile Gln Lys Arg Pro Lys Met Ile	
20	25
Glu Ser Ile Thr Ser Ile Gly Ile Phe Ile Asp Gly Gly Tyr Phe Thr	
35	40
Lys Ile Asn Gln Ala Leu Glu Glu Lys Leu Ser Leu Asn Ile Asp Ile	
50	55
Thr Phe Phe Phe Lys Phe Ile Lys Glu Lys Ile Ala Tyr Glu Tyr Asn	
65	70
Leu Asn Thr Glu Phe Cys Gln Ile Thr Glu Ser His Tyr Phe Arg Gly	
85	90
Arg Tyr Arg Val Asn Asp Ala Asn Asn Lys His Leu Leu Phe Ser Glu	
100	105
Arg Lys Phe Glu Asp Ser Leu Ile Glu Asn Asp Val Ile Phe His Tyr	
115	120
Lys His Leu Arg Glu Ile Gln Lys Glu Gly Glu Ile Asn Val Ile Glu	
130	135
Lys Gly Ile Asp Val Trp Phe Ala Leu Glu Ala Tyr Glu Leu Ser Leu	
145	150
Phe Arg Lys Phe Asp Phe Val Ile Leu Ile Thr Gly Asp Ala Asp His	
	155
	160

Asp Asp Ser Phe Lys Tyr Val Val Lys Phe Arg Gly Ala Gly His Gly
 35 40 45
 Thr Lys Ala Leu Ile Ala Glu Leu Ile Gly Gly Glu Val Ala Arg Val
 50 55 60
 Leu Gly Phe Arg Val Pro Glu Leu Val Phe Leu Asn Leu Asp Glu Ala
 65 70 75 80
 Phe Gly Arg Ser Glu Gly Asp Glu Glu Ile Gln Asp Leu Leu Gln Gly
 85 90 95
 Ser Arg Gly Leu Asn Met Gly Leu His Phe Leu Ser Gly Ala Leu Pro
 100 105 110
 Phe Asp Pro Val Val Thr Glu Val Asp Glu Lys Leu Ala Ser Gln Val
 115 120 125
 Val Trp Leu Asp Ala Leu Leu Thr Asn Val Asp Arg Thr Val Lys Asn
 130 135 140
 Thr Asn Met Leu Met Trp His Lys Glu Leu Trp Leu Ile Asp His Gly
 145 150 155 160
 Ala Ser Leu Phe Phe His His Ser Trp Val Asn Trp His Lys His Ala
 165 170 175
 Leu Ser Ser Phe Thr Gln Val Lys Asp His Ala Leu Leu Pro Leu Ala
 180 185 190
 Gly Lys Leu Asp Glu Val Asp Ala Glu Phe Arg Lys Leu Leu Thr Ser
 195 200 205
 Glu Lys Ile Arg Glu Ile Val Asp Leu Ile Pro Asp Ser Trp Ile Glu
 210 215 220
 Trp Arg Asp Lys Asp Glu Thr Pro Gln Asp Ile Arg Asp Ile Tyr Tyr
 225 230 235 240
 Arg Phe Leu Lys Glu Arg Ile Glu His Ser Glu Ile Phe Val Lys Glu
 245 250 255
 Ala Gln His Ala Arg Lys Ala Tyr Leu
 260 265

<210> 5507

<211> 146

<212> PRT

<213> B.fragilis

<400> 5507

Ser Val Phe Thr Met Asn Met Ser Ile Thr Lys Arg Asn Phe Leu Gly
 1 5 10 15
 Tyr Leu Ser Ile Leu Thr Leu Val Gly Gly Gly Leu Gly Ala Leu Val
 20 25 30
 Leu His Tyr Leu Glu Pro Gly His Tyr Phe Gly Gly Tyr Pro Leu Ile
 35 40 45
 Pro Val Tyr Phe Tyr Ile Phe Gly Val Phe Tyr Ile Tyr Met Phe Asp
 50 55 60
 Ala Cys Arg Arg His Ala Pro Glu Lys Met Val Met Leu Phe Leu Val
 65 70 75 80
 Ala Lys Val Leu Lys Met Ile Val Ser Val Phe Leu Leu Ile Ile Tyr
 85 90 95
 Cys Val Ala Val Pro Asp Ser Ala Ile Glu Phe Leu Leu Thr Phe Leu
 100 105 110
 Ala Phe Tyr Leu Gly Tyr Leu Ile Tyr Glu Ser Trp Phe Phe Phe Val
 115 120 125
 Phe Glu Trp Asn Gln Lys Leu Thr Lys Lys Ser Lys Lys Tyr Glu Thr
 130 135 140
 Val Ala
 145

<210> 5508

<211> 461

<212> PRT

<213> B.fragilis

<400> 5508

Lys	Tyr	Val	Thr	Leu	His	Tyr	Met	Ala	Gln	Gln	Thr	Asp	Pro	Arg	Ile	1	5	10	15
Leu	Gly	Thr	Glu	Pro	Ile	Gly	Lys	Leu	Leu	Leu	Gln	Tyr	Ser	Ile	Pro	20	25	30	
Ala	Ile	Ile	Gly	Met	Thr	Ile	Thr	Ser	Leu	Tyr	Asn	Ile	Ile	Asp	Ser	35	40	45	
Ile	Phe	Ile	Gly	His	Gly	Val	Gly	Pro	Met	Ala	Ile	Ser	Gly	Leu	Ala	50	55	60	
Ile	Thr	Phe	Pro	Leu	Met	Asn	Leu	Val	Val	Ala	Phe	Cys	Val	Leu	Ile	65	70	75	80
Ser	Ala	Gly	Gly	Ala	Thr	Ile	Ser	Ser	Ile	Arg	Leu	Gly	Gln	Lys	Asp	85	90	95	
Ile	Lys	Gly	Ala	Thr	Asp	Val	Leu	Gly	Asn	Thr	Leu	Met	Leu	Cys	Leu	100	105	110	
Thr	Asn	Ala	Val	Leu	Phe	Gly	Gly	Leu	Ala	Tyr	Leu	Phe	Leu	Asp	Pro	115	120	125	
Ile	Leu	Phe	Phe	Phe	Gly	Ala	Ser	Thr	Gly	Thr	Leu	Pro	Tyr	Ala	Arg	130	135	140	
Asp	Phe	Met	Gln	Val	Ile	Leu	Leu	Gly	Thr	Pro	Ile	Thr	Tyr	Thr	Met	145	150	155	160
Ile	Gly	Leu	Asn	Asn	Val	Met	Arg	Ala	Thr	Gly	Tyr	Pro	Lys	Lys	Ala	165	170	175	
Met	Leu	Thr	Ser	Leu	Val	Thr	Val	Ile	Ala	Asn	Val	Ile	Ile	Ala	Pro	180	185	190	
Val	Phe	Ile	Phe	His	Phe	Gly	Trp	Gly	Ile	Arg	Gly	Ala	Ala	Met	Ala	195	200	205	
Thr	Val	Leu	Ser	Gln	Phe	Ile	Gly	Met	Ile	Trp	Val	Val	Asn	His	Phe	210	215	220	
Arg	Asn	Lys	Glu	Ser	Phe	Val	His	Phe	Met	Pro	Gly	Phe	Trp	Lys	Met	225	230	235	240
Lys	Lys	Arg	Ile	Ile	Gly	Ser	Ile	Phe	Ser	Ile	Gly	Met	Ser	Pro	Phe	245	250	255	
Ala	Met	Asn	Val	Thr	Ala	Cys	Ile	Ile	Val	Ile	Leu	Ile	Asn	Asn	Ser	260	265	270	
Leu	Gln	Lys	Tyr	Gly	Gly	Asp	Met	Ala	Ile	Gly	Ala	Tyr	Gly	Ile	Ile	275	280	285	
Asn	Arg	Leu	Leu	Met	Leu	Tyr	Val	Met	Val	Val	Met	Gly	Leu	Thr	Met	290	295	300	
Gly	Met	Gln	Pro	Ile	Val	Gly	Tyr	Asn	Tyr	Gly	Ala	Gln	Lys	Ile	Asp	305	310	315	320
Arg	Val	Lys	His	Thr	Leu	Arg	Leu	Gly	Ile	Ile	Val	Gly	Val	Leu	Ile	325	330	335	
Thr	Ser	Ser	Gly	Phe	Ile	Ile	Cys	Glu	Leu	Phe	Pro	His	Thr	Val	Ser	340	345	350	
Ala	Ile	Phe	Thr	Asp	Ser	Asp	Glu	Leu	Ile	Asp	Met	Ala	Ser	Ser	Gly	355	360	365	
Leu	Arg	Ile	Cys	Thr	Leu	Met	Phe	Pro	Phe	Val	Gly	Ala	Gln	Ile	Val	370	375	380	
Ile	Ser	Asn	Phe	Phe	Gln	Ser	Ile	Gly	Met	Ala	Lys	Ile	Ser	Ile	Phe	385	390	395	400
Leu	Ser	Leu	Ser	Arg	Gln	Leu	Val	Tyr	Leu	Leu	Pro	Gly	Leu	Leu	Leu	405	410	415	
Leu	Pro	Pro	Leu	Tyr	Gly	Val	Lys	Gly	Val	Trp	Ile	Ser	Met	Pro	Val	420	425	430	

2300

Ser Asp Gly Leu Ala Phe Val Thr Ala Val Val Ile Leu Met Val Tyr
 435 440 445
 Ile Lys Lys Val Lys Glu Lys Thr Ser Gly Gln Lys Leu
 450 455 460

<210> 5509
 <211> 330
 <212> PRT
 <213> B.fragilis

<400> 5509
 Thr Glu Val Thr Met Asn Arg Phe Ile Gly Tyr Ile Gln Val Ala Cys
 1 5 10 15
 Cys Cys Leu Leu Leu Cys Ala Cys Cys Val Arg Asp Gly Met Asp Glu
 20 25 30
 Asp Cys Asn Cys Tyr Val Arg Phe Val Tyr Asp Tyr Asn Leu Gln Tyr
 35 40 45
 Ile Asp Leu Ile His Lys Gln Ala Thr Lys Met Asn Leu Tyr Val Phe
 50 55 60
 Asp Glu Lys Gly Val Phe Val Thr Glu Ser Glu Glu Glu Ser Gly Ala
 65 70 75 80
 Cys Ala Pro Asp Tyr Leu Met Thr Leu Pro Gly Ala Met Ala Gly Arg
 85 90 95
 Arg Tyr Ile Phe Val Ala Trp Ser Gly Leu Tyr Asp Lys Ser Tyr Asp
 100 105 110
 Lys Val Thr Leu Thr Pro Gly Val Ser Thr Leu Glu Asp Leu Glu Val
 115 120 125
 Ser Val Asn Asn Leu Lys Thr Arg Ile Gly Gly Gly Val Val Asp Arg
 130 135 140
 Glu Leu His Leu Leu Trp His Gly Lys Gln Thr Glu Val Ser Pro Gln
 145 150 155 160
 Tyr Asn Asn Asp Ile Thr Thr Val Ser Leu Leu Lys Asn Thr Lys Lys
 165 170 175
 Phe Arg Ile Ile Met Gln Met Leu Asp Asp Ser Ser Ile His Val Asp
 180 185 190
 Asp Tyr Asp Phe Arg Ile Ile Ser Pro Asn Gly Arg Tyr Asn His Glu
 195 200 205
 Asn Gly Leu Leu Gly Asp Glu Thr Asp Glu Lys Val Glu Tyr Thr Ala
 210 215 220
 Tyr His Thr Glu Asp Asp Pro Glu Thr Gly Ala Ile Ala Lys Leu Asn
 225 230 235 240
 Thr Leu Arg Leu Met Thr Asp Thr Glu Asn Arg Leu Val Ile Thr His
 245 250 255
 Lys Ser Ser Gly Asn Val Ile Leu Asp Ile Pro Leu Asn Lys Tyr Leu
 260 265 270
 Asn Ala Leu Arg Leu Gln Gln Tyr Ala Asp Ile Pro Leu Gln Glu Tyr
 275 280 285
 Leu Asp Arg Ala Asp Lys His Gly Ile Ile Leu Phe Phe Lys Gly Met
 290 295 300
 Asp Gly Asn Gly Asn Tyr Ile Ser Val Asp Val Gln Ile Asn Gly Trp
 305 310 315 320
 Leu Ile Arg Lys Gln Glu Val Asp Gly Val
 325 330

<210> 5510
 <211> 768
 <212> PRT
 <213> B.fragilis

<400> 5510

Lys Asp Lys Thr Met Lys Gln Phe His Tyr Thr Ile Gln Thr Leu Ile
 1 5 10 15
 Arg Asp Arg Arg Ser Cys Val Ile Lys Val Ile Ser Leu Ser Leu Gly
 20 25 30
 Leu Leu Val Ser Ile Ile Leu Phe Ser Arg Val Ala Phe Glu Leu Ser
 35 40 45
 Tyr Asp Asn Cys Phe Gln Asp Val Asp Asn Leu Tyr Ile Val Lys Thr
 50 55 60
 Glu Trp Ile Lys Asp Gly Val Ile Lys Gly Asn Ala Gly Ser Tyr Thr
 65 70 75 80
 Leu Ile Pro Ile Ala Ser Thr Val Ala Glu Glu Phe Pro Lys Glu Val
 85 90 95
 Glu Ser Ala Val Cys Ser Ser Ile Ser Phe Glu Ala Ile Phe Lys Ile
 100 105 110
 Gly Asn Arg Lys Met Asn Lys Ser Phe Ile Leu Ser Asp Ser Leu Tyr
 115 120 125
 Phe Arg Thr Met Gly Ile Glu Val Ile Ser Gly Asn Pro Asn Asp Leu
 130 135 140
 Thr Asn Pro Asp Val Leu Phe Leu Ser Gln Ser Val Ala Arg Glu Ala
 145 150 155 160
 Phe Gly Glu Glu Asn Pro Ile Gly Lys Thr Leu His Met Met Val Trp
 165 170 175
 Gly Thr Pro Val Glu Thr Leu Val Lys Gly Val Phe Ala Asp Leu Pro
 180 185 190
 Tyr Asn Val Ser Leu Glu Arg His Glu Ala Val Leu Ser Phe Ala Ser
 195 200 205
 His Ser Lys Tyr Gly Trp Gly Arg Pro Gly Trp Thr Ser Gly Gly Asn
 210 215 220
 Tyr Asn Ala Phe Ile Arg Leu Lys Asp Gly Glu Arg Ser Ala Asp Val
 225 230 235 240
 Ile Asn Thr Asp Ile Asp Lys Val Ile Ala Lys His Ile Pro Ser Asp
 245 250 255
 Met Asn Met His Leu His Met Ile Val Val Pro Leu Arg Thr Ile His
 260 265 270
 Leu Glu His Ser Asp Val Lys Arg Thr Ile Leu Ile Leu Ser Leu Leu
 275 280 285
 Gly Phe Ala Ile Leu Phe Ala Ala Thr Met Asn Tyr Val Leu Ile Phe
 290 295 300
 Val Ser Ser Leu Ser Gln Arg Ala Lys Gly Ile Gly Ile His Lys Cys
 305 310 315 320
 Asn Gly Ala Ser Asp Lys Ala Ile Phe Ser Met Phe Ile Tyr Glu Thr
 325 330 335
 Ala Leu Ile Ile Gly Val Ser Leu Val Leu Met Ile Ile Phe Leu Phe
 340 345 350
 Gln Phe Gln Glu Lys Ile Glu Glu Leu Ala Glu Val Ser Leu Ser Ser
 355 360 365
 Leu Phe Thr Trp His Asn Leu Trp Ala Pro Leu Ser Val Val Thr Phe
 370 375 380
 Leu Phe Val Ile Gly Gly Ile Leu Pro Gly Lys Ile Phe Ser Leu Ile
 385 390 395 400
 Pro Val Thr Gln Val Phe His Pro Tyr Ile Lys Glu Asn Arg Gly Trp
 405 410 415
 Lys Arg Ile Leu Leu Phe Ile Glu Phe Ala Gly Val Ala Phe Ile Phe
 420 425 430
 Gly Leu Met Cys Val Ala Tyr Leu Gln Cys His Tyr Ile Ile Asn Arg
 435 440 445
 Asp Met Gly Tyr Gln Pro Lys Gly Val Ala Ser Cys Lys His Asp Phe
 450 455 460

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460

Ala	Glu	Pro	Asp	Asn	Ala	Arg	Asn	Asn	Leu	Lys	Ser	Leu	Pro	Tyr	Val
465					470					475					480
Glu	Gly	Val	Ala	Ser	Ile	Arg	Gly	Ser	Met	Thr	Trp	Phe	Gly	Asn	Arg
				485					490					495	
Glu	Val	Thr	Asp	Glu	Gly	Gly	Lys	Val	Leu	Phe	Thr	Pro	Arg	Cys	Ala
			500					505					510		
Ala	Phe	Asp	Lys	Asp	Phe	Val	Pro	Leu	Leu	Gly	Leu	His	Ile	Lys	Thr
		515					520					525			
Gly	Arg	Asn	Phe	Thr	Gly	Glu	Arg	Gln	Phe	Leu	Val	Asn	Gln	Pro	Tyr
	530					535					540				
Val	Glu	Lys	Met	Gly	Trp	Lys	Gly	Ser	Gly	Val	Gly	Glu	Ile	Val	Pro
545					550					555					560
Asn	Arg	Gly	Thr	Val	Val	Gly	Val	Leu	Ala	Pro	Phe	Cys	Cys	Gly	Val
				565					570					575	
Leu	Pro	Ala	Asp	Asn	Glu	Pro	Leu	Glu	Ile	Glu	Tyr	Gly	Thr	Asn	Leu
			580					585					590		
Arg	Asn	Val	His	Val	Arg	Leu	Lys	Glu	Pro	Phe	Thr	Glu	Asn	Leu	His
	595						600					605			
Arg	Leu	Asn	Asn	Glu	Met	Lys	Lys	Ile	Tyr	Pro	Gln	Glu	Asp	Ile	Glu
	610					615					620				
Phe	Arg	Ser	Leu	Glu	Gln	Asp	Leu	Glu	Arg	Tyr	Tyr	Arg	Pro	Thr	Ile
625					630					635					640
Ile	Phe	Arg	Asp	Ala	Thr	Phe	Leu	Ala	Phe	Ile	Thr	Ile	Leu	Phe	Ile
				645					650					655	
Thr	Leu	Met	Gly	Leu	Ile	Gly	Tyr	Ile	Asn	Asp	Glu	Val	Arg	Arg	Arg
			660					665					670		
Ser	Lys	Glu	Ile	Ala	Ile	Arg	Lys	Ile	Asn	Gly	Ala	Glu	Ala	Arg	Ser
	675						680					685			
Ile	Leu	Phe	Leu	Leu	Ser	Lys	Asp	Ile	Phe	Trp	Val	Ala	Ile	Leu	Ser
	690					695					700				
Val	Ala	Ile	Gly	Thr	Tyr	Gly	Ala	Tyr	Tyr	Met	Ser	Leu	Leu	Trp	Ile
705					710					715					720
Ser	Gln	Phe	Glu	Asp	Thr	Ile	Cys	Val	Tyr	Ala	Gly	Trp	Tyr	Val	Val
				725					730					735	
Thr	Ala	Ile	Cys	Leu	Leu	Val	Phe	Ile	Phe	Val	Phe	Ile	Ile	Gly	Arg
			740					745						750	
Ser	Trp	His	Ile	Ala	Asn	Glu	Asn	Pro	Val	Asn	Ser	Ile	Lys	Ser	Glu
		755					760					765			

<210> 5511

<211> 404

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (99)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5511

Arg	Thr	Ala	Thr	Ser	Arg	Thr	Arg	Lys	Asn	Asn	Ile	Asn	Cys	Arg	Met
1				5					10					15	
Ala	Thr	Lys	Leu	Trp	Thr	Leu	His	Phe	Met	Arg	Ile	Cys	Leu	Ala	Asn
			20					25					30		
Leu	Leu	Leu	Phe	Ile	Ser	Leu	Tyr	Leu	Leu	Tyr	Pro	Val	Leu	Pro	Val
			35				40					45			
Met	Met	Ala	Ser	Arg	Leu	Gly	Val	Pro	Val	Ser	Gln	Thr	Gly	Val	Ile
	50					55					60				
Phe	Ile	Phe	Phe	Thr	Leu	Ala	Met	Phe	Phe	Ile	Gly	Pro	Phe	His	Ala

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65              70              75              80
Tyr Leu Val Asp Val Tyr Lys Arg Lys Tyr Ile Cys Met Leu Ser Phe
      85              90              95
Gly Gly Xaa Gly Cys Ser Asn Gln Pro Gly Tyr Thr Leu Val Gln Asn
      100              105              110
Ala Thr His Leu Leu Met Leu Cys Ile Val Gln Gly Leu Ser Phe Gly
      115              120              125
Met Ala Ala Thr Ala Gly Ile Thr Leu Ala Ile Asp Ile Thr Asn Ser
      130              135              140
Thr Phe Arg Ser Ala Gly Asn Val Val Phe Ser Trp Ala Ala Arg Leu
      145              150              155              160
Gly Met Ile Ile Gly Ala Ala Leu Gly Val Tyr Leu Phe Arg Thr His
      165              170              175
Gly Phe Glu Thr Leu Leu Tyr Val Ala Val Ala Leu Gly Ala Leu Gly
      180              185              190
Ile Leu Phe Val Ser Arg Val Tyr Val Pro Phe Arg Ala Pro Ile Gly
      195              200              205
Met Lys Val Cys Ser Met Asp Arg Phe Leu Leu Leu Arg Gly Leu Ile
      210              215              220
Pro Ala Phe Asn Leu Ile Leu Ile Ala Phe Ile Pro Gly Leu Met Leu
      225              230              235              240
Pro Val Leu Ala Gly Ala Pro Ser Asp Val Pro Val Gly Gly Glu Thr
      245              250              255
Val Pro Phe Phe Ala Leu Val Gly Cys Gly Phe Leu Leu Ser Val Leu
      260              265              270
Ile Val Lys Leu Phe Phe Arg Tyr Asp Asn Lys Met Trp Leu Gln Ile
      275              280              285
Val Val Gly Leu Val Thr Val Ile Gly Ser Met Ala Met Leu Phe Ser
      290              295              300
Pro Glu Thr Ser Trp Asn Ala Pro Ala Ala Val Leu Met Gly Leu Gly
      305              310              315              320
Leu Gly Leu Val Thr Pro Glu Phe Leu Met Met Phe Val Lys Leu Ser
      325              330              335
Gln His Cys Gln Arg Gly Thr Ala Asn Thr Thr His Leu Leu Ala Trp
      340              345              350
Glu Leu Gly Val Gly Leu Gly Ile Ala Ser Ala Cys His Leu His Leu
      355              360              365
Thr Ala Asn Glu Gln Ala Val Tyr Arg Val Gly Leu Leu Ser Ala Ile
      370              375              380
Val Ser Leu Ala Phe Phe Val Leu Leu Thr Tyr Pro Tyr Phe Lys Arg
      385              390              395              400
Lys Lys Val Arg

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<210> 5512

<211> 466

<212> PRT

<213> B.fragilis

<400> 5512

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Asn Ala Arg Thr Leu Pro Ala Pro Trp Trp Lys Thr Asp Pro Thr Thr
1      5      10      15
Ser Gly Arg Thr Glu Glu Gln Val Val Asn His Val Arg Met Val Leu
      20      25      30
Tyr Glu Thr Lys Asn Asn Thr Val Arg Tyr Ser Trp Asp Leu Asn Val
      35      40      45
Ser Thr Asp Gly Met Asn Glu Phe Thr Gly Gly Asp Val Val Arg Gly
      50      55      60
Glu Asp Val Pro Ser Ala Thr Pro Thr Val Ser Arg Phe Val Thr Val

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65				70				75				80			
Gly	Arg	Glu	Val	Val	Lys	Gln	Asp	Tyr	Glu	Leu	Leu	Ile	Leu	Ile	Asn
				85					90					95	
Pro	Pro	Gly	Glu	Leu	Leu	Glu	Ile	Thr	Glu	Gln	Gly	Asn	Pro	Arg	Ser
			100					105					110		
Tyr	Leu	Ser	Arg	Ala	Ala	Asn	Met	Thr	Lys	Glu	Ser	Leu	Ile	Gln	Pro
		115					120					125			
Tyr	Gly	Ile	Ala	Ala	Asp	Asn	Asn	Phe	Tyr	Met	Thr	Asn	His	Gln	Asp
	130					135					140				
Leu	Ile	Phe	Val	Pro	Glu	Val	Glu	Leu	Arg	Asp	Asn	Gln	Arg	Met	Ala
145					150				155						160
Glu	Glu	Asn	Pro	Val	Arg	Val	Glu	Val	Glu	Arg	Ala	Val	Ala	Lys	Val
				165					170					175	
Val	Val	Ser	Gly	Val	Pro	Glu	Val	Val	Pro	His	Gly	Asp	Arg	Ile	Asp
			180					185					190		
Asn	Leu	Lys	Trp	Gly	Leu	Asp	Val	Thr	Asn	Met	Tyr	Thr	Tyr	Trp	Met
		195					200					205			
Arg	Lys	Met	Thr	Phe	Ile	Ala	Asn	Ser	Gly	Gly	Val	Pro	Asn	Glu	Met
	210					215					220				
Glu	Gln	Leu	Asn	Ala	Gly	Tyr	Arg	Glu	Glu	Arg	Tyr	Ala	Glu	Asp	Pro
225					230					235					240
Asn	Phe	Thr	Arg	Phe	Ser	Ser	Trp	Asn	Gly	Gly	Asn	Pro	Val	Gly	Gln
				245					250					255	
Phe	Glu	Tyr	Leu	Ser	Gly	Thr	Pro	Glu	Leu	Ser	Lys	Asn	Phe	Asp	Asp
			260					265					270		
Tyr	Asp	Tyr	Thr	Leu	Glu	Asn	Thr	Met	Asp	Ala	Ala	Asp	Gln	Arg	His
		275					280					285			
Asp	Val	Thr	Thr	Arg	Val	Val	Ile	Ser	Gly	Thr	Tyr	Thr	Pro	Asn	Gly
	290					295					300				
Phe	Gly	Ser	Val	Ala	Thr	Arg	Asn	Gly	Gly	Gly	Ile	Ser	Phe	Tyr	Tyr
305					310					315					320
Phe	Lys	Gly	Asn	Ala	Ile	Arg	Val	Glu	Ala	Met	Arg	Asp	Met	Val	Asn
				325					330					335	
Asp	Arg	Gly	Gln	Ile	Pro	Gln	Glu	Leu	Arg	Asp	Ala	Gly	Leu	Glu	Gln
			340					345					350		
Ala	Ile	Glu	Asn	Val	Leu	Ala	Trp	Asn	Pro	Asn	Ala	Phe	Asn	Ser	Pro
		355					360					365			
Thr	Val	Ser	Phe	Ser	Glu	Gly	Ile	His	Phe	Tyr	Tyr	Gln	Gly	Val	
	370					375					380				
Cys	Tyr	Tyr	Thr	Val	Leu	Ile	Arg	His	Phe	Ser	Asn	Asn	Met	Val	Pro
385					390					395					400
Val	Leu	Met	Gly	Tyr	Gly	Arg	Tyr	Gly	Val	Val	Arg	Asn	Asn	Val	Tyr
			405						410					415	
Gln	Leu	Ser	Ile	Asn	Lys	Ile	Ile	Gly	Pro	Gly	Gln	Pro	Val	Ile	Asn
			420					425					430		
Pro	Pro	Gly	Thr	Asp	Pro	Asp	Asp	Glu	Asp	Thr	Ser	Trp	Ile	Ser	Ala
		435					440					445			
Asp	Val	Asn	Ile	Met	Arg	Trp	Tyr	Ile	Arg	Asn	Gln	Asn	Val	Glu	Glu
	450					455					460				
Leu	Leu														
465															

<210> 5513

<211> 464

<212> PRT

<213> B.fragilis

<400> 5513

Gly Asn Val Ala Asn Phe Val Ala Asp Lys Leu Leu Phe Val Phe Asn

1		5		10		15									
Ile	Leu	Leu	Thr	Lys	Met	Gly	Thr	Ile	Ile	Val	Asp	Asp	Asn	Lys	
		20						25				30			
Gly	Val	Leu	Thr	Ala	Val	Gln	Leu	Leu	Lys	Asn	His	Phe	Ser	Lys	
		35					40				45				
Val	Ile	Thr	Leu	Ser	Ser	Pro	Val	Ser	Leu	Ser	Thr	Val	Leu	Arg	Glu
		50				55					60				
Glu	Asn	Pro	Glu	Val	Val	Leu	Leu	Asp	Met	Asn	Phe	Thr	Ser	Gly	Ile
65					70					75					80
Asn	Asn	Gly	Asn	Glu	Gly	Leu	Phe	Trp	Leu	His	Glu	Ile	Lys	Arg	Gln
				85				90						95	
Tyr	Arg	Asp	Leu	Pro	Val	Val	Leu	Phe	Thr	Ala	Tyr	Ala	Asp	Ile	Asp
			100					105					110		
Leu	Ala	Val	Arg	Gly	Ile	Lys	Glu	Gly	Ala	Ser	Asp	Phe	Val	Val	Lys
		115					120					125			
Pro	Trp	Asp	Asn	Gln	Lys	Leu	Leu	Glu	Thr	Leu	Leu	Asn	Ala	Ala	Ser
		130				135						140			
Gln	Ala	Lys	Asp	Gly	Lys	Lys	Lys	Asn	Arg	Lys	Lys	Glu	Ser	Ser	Pro
145					150					155					160
Val	Ser	Ala	Met	Tyr	Trp	Gly	Glu	Ser	Ser	Ala	Met	Gln	Gln	Leu	Arg
				165				170						175	
Thr	Leu	Ile	Glu	Lys	Val	Ala	Thr	Thr	Asn	Ala	Asn	Ile	Leu	Ile	Thr
			180					185					190		
Gly	Glu	Asn	Gly	Thr	Gly	Lys	Glu	Met	Leu	Ala	Arg	Glu	Ile	His	Ala
		195					200					205			
Leu	Ser	Pro	Arg	Ser	Ala	Glu	Ser	Met	Ile	Ser	Val	Asp	Met	Gly	Ala
		210				215					220				
Ile	Thr	Glu	Ser	Leu	Phe	Glu	Ser	Glu	Leu	Phe	Gly	His	Val	Lys	Gly
225					230					235					240
Ser	Phe	Thr	Asp	Ala	His	Ala	Asp	Arg	Thr	Gly	Lys	Phe	Glu	Ala	Ala
				245				250						255	
Asp	Arg	Ser	Ser	Leu	Phe	Leu	Asp	Glu	Ile	Gly	Asn	Leu	Pro	Phe	His
			260					265					270		
Leu	Gln	Ala	Lys	Leu	Leu	Thr	Ala	Ile	Gln	Gln	Arg	Ser	Ile	Val	Arg
		275				280						285			
Val	Gly	Ser	Asn	Gln	Ser	Ile	Pro	Val	Asp	Ile	Arg	Leu	Ile	Cys	Ala
		290				295					300				
Thr	Asn	Arg	Asn	Leu	Gln	Glu	Met	Val	Asp	Lys	Gly	Leu	Phe	Arg	Glu
305					310					315					320
Asp	Leu	Leu	Tyr	Arg	Ile	Asn	Thr	Ile	His	Val	Glu	Ile	Pro	Pro	Leu
				325				330						335	
Arg	Lys	Arg	Lys	Glu	Asp	Ile	Val	Pro	Leu	Ala	Glu	Arg	Phe	Ile	Ala
			340					345					350		
Arg	Phe	Cys	Lys	Gln	Tyr	Asp	Lys	Ala	Ser	Ile	Ser	Leu	Ser	Pro	Ala
		355				360						365			
Ala	Cys	Glu	Lys	Leu	Thr	Ala	His	Ala	Trp	Tyr	Gly	Asn	Ile	Arg	Glu
		370				375					380				
Leu	Glu	His	Ser	Ile	Glu	Lys	Ala	Val	Ile	Ile	Ser	Asp	Gly	Glu	Thr
385					390					395					400
Ile	Pro	Ala	Glu	Met	Phe	Gln	Leu	Val	Gln	Lys	Thr	Glu	Asn	Pro	Glu
				405				410						415	
Thr	Glu	Thr	Ser	Thr	Leu	Glu	Asp	Met	Glu	Lys	Ala	Met	Ile	Arg	Lys
			420					425					430		
Ala	Leu	Asp	Lys	Cys	Gly	Gly	Asn	Leu	Ser	Ala	Val	Ala	Ala	Gln	Leu
		435				440						445			
Gly	Ile	Thr	Arg	Gln	Thr	Leu	Tyr	Asn	Lys	Met	Lys	Lys	Phe	Gly	Leu
		450				455					460				

<211> 409

<212> PRT

<213> B.fragilis

<400> 5514

Lys Cys Tyr Phe Cys Ser Leu Asn Asn Ile Ile Leu Phe Tyr Met Asp
 1 5 10 15
 Ser Asn His Leu Ser Pro Leu Arg Lys Gly Val Val Gly Val Gln Phe
 20 25 30
 Leu Phe Val Ala Phe Gly Ala Thr Val Leu Val Pro Leu Leu Val Gly
 35 40 45
 Leu Asp Pro Ser Thr Ala Leu Phe Thr Ala Gly Ile Gly Thr Leu Leu
 50 55 60
 Phe His Leu Val Thr Lys Gly Lys Val Pro Ile Phe Leu Gly Ser Ser
 65 70 75 80
 Phe Ala Phe Ile Ala Pro Ile Ile Lys Ala Thr Glu Leu Tyr Gly Leu
 85 90 95
 Ala Gly Thr Leu Ser Gly Met Val Gly Val Ala Met Val Tyr Phe Val
 100 105 110
 Met Ser Ala Leu Val Lys Trp Gln Gly Ile Arg Leu Ile Glu Arg Leu
 115 120 125
 Phe Pro Pro Val Val Ile Gly Pro Val Ile Ile Leu Ile Gly Leu Ser
 130 135 140
 Leu Ala Gly Thr Gly Val Asn Met Ala Lys Glu Asn Trp Thr Leu Ala
 145 150 155 160
 Leu Leu Ser Leu Phe Thr Ala Val Ile Val Ser Ile Arg Ala Lys Gly
 165 170 175
 Leu Leu Lys Leu Ile Pro Ile Phe Cys Gly Ile Ile Val Gly Tyr Ile
 180 185 190
 Ala Ala Leu Ile Phe Tyr Asp Val Asp Met Ser Gly Val Arg Asn Ala
 195 200 205
 Ala Trp Leu Gly Phe Pro Gln Phe Val Phe Pro Gln Phe Ser Trp Glu
 210 215 220
 Pro Ile Leu Phe Met Met Pro Val Ala Ile Ala Pro Val Ile Glu His
 225 230 235 240
 Ile Gly Asp Val Tyr Val Val Asn Thr Val Thr Gly Lys Asp Tyr Val
 245 250 255
 Lys Asp Pro Gly Leu His Arg Thr Leu Leu Gly Asp Gly Leu Ala Cys
 260 265 270
 Leu Cys Ala Gly Leu Leu Gly Gly Pro Pro Val Thr Thr Tyr Ser Glu
 275 280 285
 Val Thr Gly Ala Met Ser Leu Thr Lys Val Thr Asn Pro Gln Val Ile
 290 295 300
 Arg Ile Ala Ala Ile Thr Ala Ile Leu Phe Ser Val Ile Gly Lys Val
 305 310 315 320
 Ser Ala Leu Leu Lys Ser Ile Pro Ser Ala Val Leu Gly Gly Ile Met
 325 330 335
 Leu Leu Leu Phe Gly Thr Ile Ala Cys Ala Gly Ile Ala Asn Leu Val
 340 345 350
 Asn Asn Cys Ile Asp Leu Ser Arg Thr Arg Asn Ile Ile Ile Val Ser
 355 360 365
 Leu Thr Leu Thr Ile Gly Ile Gly Gly Ala Val Leu Ala Trp Gly Glu
 370 375 380
 Phe Ser Leu Ser Gly Ile Gly Leu Ala Ala Leu Val Gly Val Gly Leu
 385 390 395 400
 Asn Leu Val Leu Pro Lys Glu Glu Arg
 405

<210> 5515

<211> 310
 <212> PRT
 <213> B.fragilis

<400> 5515

Thr	Pro	Tyr	Ala	Asn	Met	Gly	Arg	Trp	Ile	Ile	Leu	Leu	Trp	Trp	Arg
1				5					10					15	
Leu	Gln	Leu	Glu	Thr	Arg	Leu	His	Cys	Asn	Ile	Leu	Leu	Arg	Leu	Ala
			20					25					30		
Gly	Ala	Ala	Ile	Gly	Glu	Tyr	Phe	Arg	Asp	Thr	Gly	Arg	His	Ala	Leu
		35					40					45			
Val	Val	Tyr	Asp	Asp	Leu	Ser	Lys	Gln	Ala	Val	Ser	Tyr	Arg	Glu	Val
	50					55					60				
Ser	Leu	Ile	Leu	Arg	Arg	Pro	Ser	Gly	Arg	Glu	Ala	Tyr	Pro	Gly	Asp
65					70					75				80	
Ile	Phe	Tyr	Leu	His	Ser	Arg	Leu	Leu	Glu	Arg	Ala	Ala	Lys	Ile	Ile
				85					90					95	
Asn	Gln	Glu	Glu	Val	Ala	Arg	Glu	Met	Asn	Asp	Leu	Pro	Glu	Ser	Leu
			100					105					110		
Lys	Gly	Lys	Val	Lys	Gly	Gly	Gly	Ser	Leu	Thr	Ala	Leu	Pro	Ile	Ile
		115					120						125		
Glu	Thr	Gln	Ala	Gly	Asp	Val	Ser	Ala	Tyr	Ile	Pro	Thr	Asn	Val	Ile
	130					135						140			
Ser	Ile	Thr	Asp	Gly	Gln	Ile	Phe	Leu	Asp	Thr	Asp	Leu	Phe	Asn	Gln
145					150					155					160
Gly	Asn	Arg	Pro	Ala	Ile	Asn	Val	Gly	Ile	Ser	Val	Ser	Arg	Val	Gly
				165					170					175	
Gly	Asn	Ala	Gln	Ile	Lys	Ala	Met	Lys	Lys	Val	Ala	Gly	Thr	Leu	Lys
			180					185					190		
Ile	Asp	Gln	Ala	Gln	Tyr	Arg	Glu	Leu	Glu	Ala	Phe	Ser	Lys	Phe	Ser
	195						200					205			
Gly	Asp	Met	Asp	Pro	Val	Thr	Ala	Leu	Thr	Ile	Asp	Lys	Gly	Gln	Lys
	210					215					220				
Asn	Ala	Arg	Leu	Leu	Val	Gln	Pro	Gln	Tyr	Ser	Pro	Met	Pro	Val	Glu
225					230					235					240
Lys	Gln	Ile	Ala	Ile	Leu	Tyr	Cys	Gly	Ile	His	Gly	Leu	Leu	Arg	Asn
				245					250					255	
Val	Pro	Leu	Asp	Lys	Val	Glu	Asp	Phe	Glu	Ala	Ala	Phe	Leu	Asn	Thr
			260					265					270		
Leu	Ala	Leu	Asp	His	Gln	Ala	Asp	Val	Leu	Asp	Val	Leu	Lys	Thr	Gly
		275					280					285			
Val	Ile	Asn	Asp	Glu	Val	Thr	Lys	Ala	Ile	Glu	Glu	Thr	Ala	Ala	Met
	290					295						300			
Val	Ala	Lys	Gln	Tyr	Ser										
305					310										

<210> 5516
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 5516

Lys	Ile	Met	Ala	Ser	Leu	Lys	Glu	Val	Lys	Thr	Arg	Ile	Asn	Ser	Val
1				5					10					15	
Gln	Ser	Thr	Arg	Lys	Ile	Thr	Ser	Ala	Met	Lys	Met	Val	Ala	Ser	Ala
			20					25					30		
Lys	Leu	His	Lys	Ala	Gln	Gly	Ala	Ile	Glu	Asn	Met	Leu	Pro	Tyr	Gln
		35					40					45			
Arg	Lys	Leu	Asn	Lys	Ile	Leu	Thr	Asn	Phe	Leu	Ser	Ala	Asp	Leu	Pro

50		55		60
Val Glu Ser Pro Phe Cys Val Glu Arg Pro Val Lys Arg Val Ala Ile				
65	70	75	80	
Val Ala Phe Ser Ser Asn Ser Ser Leu Cys Gly Ala Phe Asn Ala Asn				
	85	90	95	
Val Leu Lys Met Phe Leu Gln Thr Val Gly Glu Tyr Arg Glu Leu Gly				
	100	105	110	
Gln Asp Asn Ile Leu Ile Tyr Pro Val Gly Lys Lys Ile Glu Glu Ala				
	115	120	125	
Val Lys Lys Leu Gly Phe Phe Pro Gln Gly Ser Tyr Gln Lys Leu Ala				
	130	135	140	
Asp Lys Pro Ser Tyr Asp Glu Ala Ala Ala Leu Ala Lys Leu Leu Met				
	145	150	155	160
Glu Leu Phe Leu Glu Lys Asn Ile Asp Arg Val Glu Leu Ile Tyr His				
	165	170	175	
His Phe Lys Ser Met Gly Val Gln Glu Leu Leu Arg Glu Arg Tyr Leu				
	180	185	190	
Pro Ile Asp Leu Ser Ala Val Gln Asn Asp Glu Glu Arg Gly Gly Val				
	195	200	205	
Val Asn Asp Tyr Ile Ile Glu Pro Ser Ala Ala Gln Leu Ile Ala Asp				
	210	215	220	
Leu Ile Pro Gln Val Leu Ser Gln Lys Ile Phe Thr Ala Ala Leu Asp				
	225	230	235	240
Ser Asn Ala Ser Glu His Ala Ala Arg Thr Leu Ala Met Gln Ile Ala				
	245	250	255	
Thr Asp Asn Ala Asn Glu Leu Ile Gln Glu Leu Thr Lys Gln Tyr Asn				
	260	265	270	
Lys Thr Arg Gln Gln Ala Ile Thr Asn Glu Leu Leu Asp Ile Val Gly				
	275	280	285	
Gly Ser Met Ala				
	290			

<210> 5517

<211> 285

<212> PRT

<213> B.fragilis

<400> 5517

Arg Lys Leu Tyr Leu Cys Ile Glu Phe Ser Cys Thr Lys Ile Lys Ile		
1	5	10
Met Arg Gln Ile Lys Gly Ile Thr Ala Ile Phe Leu Cys Cys Leu Leu		
	20	25
Val Ala Gly Cys Asp Leu Ile Asp Tyr His Pro Tyr Asp Val Asp Ile		
	35	40
Lys Gly Glu Arg Asp Ile Asn Ala Lys Asn Ile Gln Lys Ile Glu Ala		
	50	55
Lys Cys Leu Gly Lys Ser Thr Ile Arg Phe Ile Ala Met Gly Asp Ser		
	65	70
Gln Arg Trp Tyr Asp Glu Thr Val Asp Phe Val Asn Ala Val Asn Lys		
	85	90
Arg Asp Asp Ile Asp Phe Val Val His Gly Gly Asp Phe Ser Asp Phe		
	100	105
Gly Leu Thr Asp Glu Phe Leu Trp Gln Arg Asp Ile Met Asn Lys Leu		
	115	120
Lys Val Pro Tyr Val Gly Leu Ile Gly Asn His Asp Cys Leu Gly Thr		
	130	135
Gly Glu Asp Ala Phe Arg Gln Ile Phe Gly Asp Thr Asn Phe Ser Phe		
	145	150
Ile Ala Gly Gly Val Lys Phe Val Cys Leu Asn Thr Asn Ala Met Glu		
	155	160

				165					170					175			
Tyr	Asp	Tyr	Ser	Glu	Pro	Ile	Pro	Asp	Phe	Asp	Tyr	Ile	Glu	Arg	Gln		
			180					185					190				
Leu	Thr	Glu	Arg	Ala	Asp	Glu	Phe	Asn	Lys	Thr	Val	Phe	Cys	Met	His		
		195					200					205					
Ala	Arg	Pro	Leu	Cys	Asp	Gln	Phe	Asn	Asn	Asn	Val	Ala	Lys	Val	Phe		
	210					215					220						
Gln	Met	Tyr	Val	Arg	Gln	Phe	Pro	Gly	Leu	Gln	Phe	Cys	Thr	Val	Ala		
225					230					235					240		
His	Glu	His	Arg	Ile	Ser	Ala	Ser	Asp	Val	Phe	Asp	Asp	Gly	Val	Met		
			245					250					255				
Tyr	Tyr	Gly	Ser	Asn	Cys	Met	Lys	Asn	Arg	Ser	Tyr	Leu	Val	Phe	Thr		
		260						265				270					
Ile	Lys	Pro	Asp	Gly	Tyr	Asp	Tyr	Glu	Val	Val	Glu	Phe					
		275					280					285					

<210> 5518

<211> 326

<212> PRT

<213> B.fragilis

<400> 5518

Ser	Ile	Thr	Gln	Thr	Ala	Val	Met	Lys	Asn	Tyr	Ile	Val	Asn	Glu	Leu		
1			5					10					15				
Ile	Ala	Ala	Met	Lys	Glu	Arg	Ile	Pro	Arg	Gly	Ile	Asn	Leu	Ala	Asn		
		20						25				30					
Tyr	Leu	Thr	Asp	Ala	Leu	Cys	Met	Gly	Lys	Glu	Ala	Val	Tyr	Arg	Arg		
		35				40					45						
Leu	Arg	Gly	Glu	Val	Ala	Phe	Thr	Phe	Asp	Glu	Ile	Ala	Met	Ile	Ser		
	50				55					60							
Cys	Lys	Leu	Gly	Ile	Ser	Ile	Asp	Gln	Ile	Ile	Gly	Asn	His	Gln	Ser		
65					70				75					80			
Asn	Arg	Val	Thr	Phe	Asp	Leu	Asn	Leu	Leu	His	Ser	Pro	Asp	Pro	Leu		
			85					90				95					
Glu	Ser	Tyr	Tyr	Glu	Ile	Ile	Glu	Arg	Tyr	Leu	Arg	Ile	Phe	Asn	Tyr		
		100						105				110					
Val	Lys	Asp	Asp	Ile	Ser	Thr	Lys	Ile	Tyr	Thr	Ala	Ser	Asn	Val	Ile		
		115					120					125					
Pro	Phe	Thr	Leu	Tyr	Ser	Ser	Tyr	Glu	Tyr	Leu	Ser	Lys	Phe	Arg	Leu		
	130					135					140						
Cys	Arg	Trp	Ile	Tyr	Gln	Asn	Gly	Lys	Ile	Arg	Thr	Pro	Asn	Ser	Leu		
145				150						155					160		
Ser	Gly	Met	His	Ile	Pro	Asp	Lys	Ala	Val	His	Ala	His	Lys	Leu	Leu		
			165					170						175			
Ser	Glu	Ala	Val	Lys	Ala	Cys	Arg	Lys	Thr	Cys	Phe	Ile	Trp	Asp	Ser		
		180						185				190					
Asn	Val	Phe	Tyr	Ser	Phe	Val	Lys	Glu	Met	Lys	Tyr	Phe	Ala	Gly	Leu		
	195						200					205					
Asn	Leu	Ile	Ser	Glu	Thr	Asp	Leu	Ile	His	Leu	Lys	Asn	Glu	Leu	Glu		
	210				215						220						
Leu	Leu	Leu	His	Glu	Leu	Gln	Ile	Ser	Ala	Lys	Gly	Glu	Phe	Ser			
225				230					235					240			
Asn	Gly	Asn	Lys	Val	Ala	Ile	Tyr	Leu	Ser	Asn	Ile	Asp	Phe	Glu	Ala		
			245					250						255			
Thr	Tyr	Ser	Tyr	Ile	Glu	Lys	Lys	Asp	Phe	Gln	Ile	Ser	Leu	Leu	Arg		
		260						265					270				
Val	Tyr	Ser	Ile	Asn	Ser	Met	Asp	Ser	Gln	Ser	Pro	Arg	Ile	Cys	Gly		
	275						280					285					
Ile	Gln	Lys	Asp	Trp	Ile	Gln	Ser	Leu	Lys	Arg	His	Ser	Thr	Leu	Ile		

290 295 300
 Ser Glu Ser Gly Glu Ser Gln Arg Ile Thr Phe Leu Glu Gln Gln Lys
 305 310 315 320
 Ser Phe Ile Asp Thr Leu
 325

<210> 5519
 <211> 328
 <212> PRT
 <213> B.fragilis

<400> 5519
 Thr Glu Lys Gln Tyr Lys Leu Lys Ile Met Ile Thr Asn Glu Leu Asn
 1 5 10 15
 Ile Gly Leu Ile Glu Ala Ala Lys Glu Lys Met Pro Thr Gly Thr Asn
 20 25 30
 Leu Ala Asn Thr Leu Met Asp Ile Leu Tyr Ile Gly Lys Glu Ala Ile
 35 40 45
 Tyr Arg Arg Leu Arg Gly Glu Val Pro Phe Thr Leu Ala Glu Ala Ala
 50 55 60
 Val Ile Ser Arg Lys Leu Gly Ile Ser Leu Asp Lys Met Ile Gly Val
 65 70 75 80
 Ser Phe Ser Asn Asn Ala Val Phe Asp Leu Asn Val Val His His Thr
 85 90 95
 Asn Thr Phe Glu Thr Tyr His Asp Ile Leu Thr Lys Tyr Val Asn Ala
 100 105 110
 Phe Asp Asn Ile Arg Glu Asp Pro Thr Thr Glu Met Ala Thr Ser Ser
 115 120 125
 Asn Ile Leu Pro Gln Ala Leu Tyr Leu Lys His Asp Val Leu Ser Lys
 130 135 140
 Phe Arg Leu Phe Lys Trp Met Tyr Gln Asn Glu Asn Ile Lys Cys Lys
 145 150 155 160
 His Phe Asp Glu Leu Glu Ile Pro His Lys Ile Tyr Asn Ile Gln Lys
 165 170 175
 Asp Phe Val Asn Met Thr Gln Gln Met Lys Thr Thr Asp Tyr Ile Trp
 180 185 190
 Asp Asn Thr Val Phe Glu His Val Val Arg Asp Ile Gln Phe Phe Ser
 195 200 205
 Glu Ile His Leu Val Ser Glu Glu Asp Lys Glu Leu Ile Lys Asp Asp
 210 215 220
 Leu Leu Leu Leu Thr Asp Glu Leu Glu Glu Leu Ala Gly Lys Gly Lys
 225 230 235 240
 Tyr Glu Thr Gly Asn Asp Val Arg Ile Tyr Ile Ser Asn Ile Lys Phe
 245 250 255
 Asp Ala Thr Tyr Ser Tyr Val Ala Thr Ser Asn Ser His Ile Ser Met
 260 265 270
 Ile Arg Ile Tyr Ser Ile Asn Ala Ile Thr Thr Gln Asp Asp Gly Met
 275 280 285
 Phe Arg Ser Leu Lys Glu Trp Val Gln Ser Leu Lys Lys Phe Ser Thr
 290 295 300
 Gln Ile Ser Glu Ser Gly Glu Met Gln Arg Ile Arg Phe Phe Asn Glu
 305 310 315 320
 Gln Arg Glu Ile Ile Asn Thr Leu
 325

<210> 5520
 <211> 463
 <212> PRT
 <213> B.fragilis

<400> 5520

Gln Phe Phe Leu Val Pro Phe Phe Leu Leu Ser Asn Asn Phe Leu Ile
 1 5 10 15
 Leu Ser Glu Tyr Leu Ile Ile Ala Phe Lys Arg Phe Ala Ser Trp Gly
 20 25 30
 Ser Cys Thr Phe Ala Ser Lys Ile Thr Arg Thr Met Ile Arg Lys Phe
 35 40 45
 Phe Ile Leu Phe Phe Leu Gly Phe Phe Gly Phe Ala Glu Ala Gln Gln
 50 55 60
 Pro Ser Val Gly Leu Thr Leu Lys Glu Ala Glu Gln Arg Phe Leu Lys
 65 70 75 80
 Cys Asn Leu Ser Leu Leu Ala Glu Arg Tyr Asn Val Asp Ile Ala Gln
 85 90 95
 Ala Arg Leu Leu Gln Ala Gly Leu Phe Asp Asn Pro Val Ile Ser Phe
 100 105 110
 Glu Gln Asn Val Tyr Asn Arg Leu Asn Gly Lys Tyr Phe Asp Phe Gly
 115 120 125
 Lys Lys Gly Glu Ser Val Val Glu Ile Glu Gln Val Ile Arg Leu Ala
 130 135 140
 Gly Gln Arg Asn Lys Gln Ile Arg Leu Glu Lys Ile Asn Lys Glu Ile
 145 150 155 160
 Ala Gly Tyr Gln Phe Glu Glu Val Met Arg Thr Leu Arg Gln Glu Leu
 165 170 175
 Gly Glu Ala Phe Thr Glu Val Phe Tyr Leu Ser Lys Ser Leu Ser Val
 180 185 190
 Tyr Asp Lys Glu Ile Asn Ser Leu Glu His Leu Leu Thr Gly Ile Lys
 195 200 205
 Glu Gln His Ala Lys Gly Asn Ile Ser Leu Met Glu Met Ala Arg Leu
 210 215 220
 Glu Ser Met Leu Leu Ser Leu Lys Lys Asp Lys Asn Glu Cys Glu Ser
 225 230 235 240
 Asn Tyr Leu Ser Arg Arg Gly Glu Leu Asn Leu Leu Leu Asn Leu Pro
 245 250 255
 Ala Asp Phe Arg Thr Glu Pro Val Ile Asp Glu Gly Asp Leu Arg Gln
 260 265 270
 Leu Asn Met Asp Arg Leu Ser Tyr Ala Asp Leu Gln Glu Arg Val His
 275 280 285
 Gly Arg Pro Asp Gln Lys Leu Ala Arg Ser Cys Val Thr Ala Ser Gln
 290 295 300
 Ala Asp Leu Lys Leu Gln Lys Ala Leu Ala Phe Pro Glu Phe Ala Val
 305 310 315 320
 Lys Gly Ser Tyr Asp Arg Gln Gly Asn Phe Ile Asn Asn Tyr Phe Ala
 325 330 335
 Ile Gly Phe Ser Met Ser Val Pro Ile Phe Asn Arg Asn Gln Gly Asn
 340 345 350
 Ile Lys Met Ala Arg Phe Asn Leu Leu Lys Ala Asp Arg Glu Gln Glu
 355 360 365
 Tyr Ser Arg Asn Lys Ala Glu Ala Glu Leu Tyr Ala Ala Tyr Thr Ala
 370 375 380
 Leu Glu Lys Ala Cys Gln Leu Tyr Gln Ser Thr Asp Met Gly Leu Glu
 385 390 395 400
 Gln Asn Phe Glu Lys Leu Ile Ala Gly Ala Asn Glu Asn Phe Ile Lys
 405 410 415
 Arg Asn Ile Ser Leu Leu Glu Phe Ile Asp Phe Tyr Asp Ser Tyr Lys
 420 425 430
 Glu Thr Cys Ile Arg Leu Tyr Glu Ile Lys Lys Asn Val Leu Leu Gly
 435 440 445
 Ile Glu Asn Leu Asn Ala Val Ala Gly Gln Pro Ile Phe Asn Tyr

450

455

460

<210> 5521

<211> 225

<212> PRT

<213> B.fragilis

<400> 5521

Gln Thr Arg Lys Arg Met Phe Met Asp Ala Thr Lys Lys Ile Thr Ala
 1 5 10 15
 Leu Phe Asp Cys Asp Gly Val Ile Val Asp Thr Glu Gly Gln Tyr Thr
 20 25 30
 Val Phe Trp Asn Glu Met Gly Gln Lys Tyr Val Asn Asp Ala Asn Phe
 35 40 45
 Gly Ser Lys Val Lys Gly Gln Thr Leu Val Gln Ile Tyr Asp Lys Tyr
 50 55 60
 Phe Ala Gly Glu Pro Glu Lys Gln Arg Asp Ile Thr Glu Ala Leu Asn
 65 70 75 80
 Arg Phe Glu Ile Lys Met Asn Tyr Asp Tyr Val Pro Gly Ile Val Glu
 85 90 95
 Phe Ile Ala Asp Leu Arg Arg His Gly Val Lys Ile Ala Leu Val Thr
 100 105 110
 Ser Ser Asn Thr Ala Lys Met Glu Asn Val Tyr His Ala His Pro Glu
 115 120 125
 Phe Lys Ser Leu Phe Asp Glu Ile Leu Thr Ala Glu Arg Phe Lys Arg
 130 135 140
 Ser Lys Pro Asp Pro Glu Cys Phe Leu Leu Gly Met Thr Ile Phe Gly
 145 150 155 160
 Ser Asp Ser Lys Asp Ser Tyr Val Phe Glu Asp Ser Phe His Gly Leu
 165 170 175
 Gln Ala Gly Arg Ser Ser Gly Ala Ile Val Val Gly Leu Ala Thr Thr
 180 185 190
 Asn Ser Arg Glu Ala Ile Ala Asp Lys Ala Asp Tyr Val Ile Asp Asp
 195 200 205
 Phe Arg Gly Met Thr Tyr Glu Lys Leu Leu Thr Ile Thr Ser Arg Tyr
 210 215 220
 Ile
 225

<210> 5522

<211> 228

<212> PRT

<213> B.fragilis

<400> 5522

Tyr His Phe Asn Leu Lys Ile Met Thr Tyr Leu Ala Thr Asn Pro Leu
 1 5 10 15
 Phe His Gly Ile Ser Pro Glu Thr Leu Ser Arg Asp Phe Asp Gly Ile
 20 25 30
 Val Ser His Leu Arg Met Phe Arg Lys Gly Asp Ile Leu Ala Arg Gln
 35 40 45
 Gly Asp Val Cys Asn Arg Leu Met Ile Leu Leu Lys Gly Ser Val Arg
 50 55 60
 Gly Glu Met Ile Asp Tyr Ser Gly Arg Leu Ile Lys Val Glu Asp Ile
 65 70 75 80
 Ile Ala Pro Arg Ala Ile Ala Pro Leu Phe Leu Phe Gly Ala Asp Asn
 85 90 95
 Arg Tyr Pro Val Glu Val Thr Ala Asn Glu Ala Thr Glu Val Phe Glu
 100 105 110


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Ile Pro Lys Glu Ser Val Leu Lys Leu Phe Arg Arg Asn Glu Lys Phe
    115                120                125
Leu Glu Asn Tyr Met Asn Leu Ser Ala Asn Tyr Ala Arg Thr Leu Ala
    130                135                140
Asp Lys Leu Phe Phe Met Ser Phe Lys Thr Ile Arg Gln Lys Leu Ala
    145                150                155                160
Ser Tyr Leu Leu Arg Met Leu Lys Gln Gln Gly Asp Ser Pro Ile Gln
    165                170                175
Leu Asp Arg Ser Gln Gln Glu Leu Ala Asp Tyr Phe Gly Val Ser Arg
    180                185                190
Pro Ser Leu Ala Arg Glu Leu Ala His Met Gln Asp Asp Gly Leu Ile
    195                200                205
Lys Thr Asp Arg Lys Leu Val His Ile Leu Arg Lys Glu Asp Met Met
    210                215                220
Gln Leu Ile Gln
    225

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<210> 5523
 <211> 70
 <212> PRT
 <213> B.fragilis

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<400> 5523
Ser Leu His Asn Ala Lys His Gln Gln Met Cys Ser Val Leu His Gln
1          5          10          15
Arg Ile Thr Arg Leu Val Ala Ala Thr Lys Thr Pro Lys Arg Lys His
    20          25          30
Thr Tyr Ile Phe Pro Leu Val Asn Ile Asp Gln Ile Gly Met Glu Arg
    35          40          45
Ala Asp Lys Lys His Cys Lys Arg Lys Lys Tyr Lys Tyr Asp Ser Arg
    50          55          60
Leu Thr Asp Arg His Ala
65          70

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<210> 5524
 <211> 131
 <212> PRT
 <213> B.fragilis

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<400> 5524
Lys Lys His Asn Met Pro Glu Lys His Ile Tyr Glu Tyr Ala Val Val
1          5          10          15
Arg Ile Val Pro Lys Val Glu Arg Glu Glu Phe Ile Asn Val Gly Val
    20          25          30
Ile Leu Phe Ser Lys Gln Ala Ala Phe Ile Arg Met Arg Tyr Glu Ile
    35          40          45
Asn Lys Lys Arg Leu Glu Ala Leu Ser Pro Glu Pro Asp Ile Asp Ser
    50          55          60
Phe Arg Lys Tyr Leu Glu Ala Phe Ser Lys Val Cys Ala Gly Cys Pro
65          70          75          80
Thr Gly Gly Gly Ile Ala Lys Leu Glu Val Pro Glu Arg Phe Arg Trp
    85          90          95
Leu Thr Ala His Arg Ser Ser Cys Ile Gln Thr Ser Arg Pro His Val
    100         105         110
Gly Tyr Ser Asp Asn Leu Glu Glu Thr Leu Glu Arg Leu Phe Glu Glu
    115         120         125
Leu Val Leu
    130

```

<210> 5525
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 5525
 Phe Arg Gly Lys Tyr Thr Val Phe Val Arg Glu Asn Gly His Phe Ser
 1 5 10 15
 Thr Glu Arg Glu Tyr Ala Asp Thr Phe Phe Ser Ile Arg Ile Leu His
 20 25 30
 Lys Asn Val Arg Phe Ile Arg Glu Ile Glu Lys Lys Asp Lys Asn Arg
 35 40 45
 Ser Phe Leu Leu Gly Asn Met Ser Tyr Phe Val Thr Phe Ala Pro Pro
 50 55 60
 Tyr Ser Ile Ala
 65

<210> 5526
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 5526
 Thr Ile Leu Lys Leu Lys Ile Met Leu Leu Ser Val Leu Leu Gln Ala
 1 5 10 15
 Ala Ala Ala Gly Val Gly Leu Ser Lys Leu Gly Ala Ala Leu Gly Ala
 20 25 30
 Gly Leu Ala Val Ile Gly Ala Gly Ile Gly Ile Gly Lys Ile Gly Gly
 35 40 45
 Ser Ala Met Glu Gly Ile Ala Arg Gln Pro Glu Ala Ser Gly Asp Ile
 50 55 60
 Arg Met Asn Met Ile Ile Ala Ala Ala Leu Val Glu Gly Val Ala Leu
 65 70 75 80
 Leu Ala Leu Val Val Cys Leu Leu Val Leu Phe Leu
 85 90

<210> 5527
 <211> 379
 <212> PRT
 <213> B.fragilis

<400> 5527
 Ser Tyr Ile Lys Met Asn Met Glu Ile Asn Pro Ser Glu Tyr Lys Ile
 1 5 10 15
 Leu Ile Val Asp Asp Val Met Ser Asn Val Leu Leu Leu Lys Val Leu
 20 25 30
 Leu Thr Asn Glu Lys Phe Asn Ile Val Thr Ala Ser Asn Gly Asn Gln
 35 40 45
 Ala Leu Asp Gln Val Lys Lys Glu Asn Pro Asp Leu Ile Leu Leu Asp
 50 55 60
 Val Met Met Pro Asp Met Ser Gly Phe Glu Val Ser Gln Lys Leu Lys
 65 70 75 80
 Ala Asp Pro Glu Ala Ala His Ile Pro Ile Ile Phe Leu Thr Ala Leu
 85 90 95
 Asn Ser Thr Ala Asp Ile Val Lys Gly Phe Gln Val Gly Gly Asn Asp
 100 105 110
 Phe Ile Ser Lys Pro Phe Asn Lys Glu Glu Leu Ile Ile Arg Val Ser
 115 120 125
 His Gln Ile Ser Leu Val Ala Ala Lys Arg Ile Ile Glu Ala Lys Thr

130 135 140
 Glu Glu Leu Lys Lys Thr Ile Ile Gly Arg Asp Lys Leu Tyr Ser Val
 145 150 155 160
 Ile Ala His Asp Leu Arg Ser Pro Met Gly Ser Ile Lys Met Val Leu
 165 170 175
 Asn Met Leu Ile Leu Ser Leu Pro Lys Glu Lys Ile Gly Glu Asp Met
 180 185 190
 Tyr Glu Leu Leu Thr Met Ala Asn Gln Thr Thr Glu Asp Val Phe Ser
 195 200 205
 Leu Leu Asp Asn Leu Leu Lys Trp Thr Lys Ser Gln Ile Gly Lys Leu
 210 215 220
 Lys Val Val Tyr Gln Asp Ile Asp Met Val Glu Val Val Glu Gly Val
 225 230 235 240
 Gly Glu Ile Phe Ala Met Val Ala Gly Leu Lys Asn Ile Arg Leu Arg
 245 250 255
 Ile Glu Ser Pro Glu Cys Gln Ala Val His Ala Asp Ile Asp Met Ile
 260 265 270
 Lys Thr Val Ile Arg Asn Leu Ile Ser Asn Ala Ile Lys Phe Ser Asn
 275 280 285
 Glu Gly Ser Glu Val Leu Ile Lys Val Glu Glu Ser Asp Gly Met Ser
 290 295 300
 Val Val Ser Val Lys Asp Ser Gly Cys Gly Ile Asp Glu Glu Ser Gln
 305 310 315 320
 Lys Lys Leu Leu His Thr Asp Thr His Phe Ser Thr Phe Gly Thr Asn
 325 330 335
 Asn Glu Glu Gly Ser Gly Leu Gly Leu Leu Leu Cys Gln Asp Phe Val
 340 345 350
 Val Lys Asn Gly Gly Lys Leu Trp Phe Thr Ser Val Lys Asp Glu Gly
 355 360 365
 Ser Thr Phe Tyr Phe Ser Ile Pro Leu Lys Lys
 370 375

<210> 5528

<211> 532

<212> PRT

<213> B.fragilis

<400> 5528

Ile Cys Thr Lys Phe Arg Asp Tyr Met Lys Thr Val Lys Thr His Ile
 1 5 10 15
 Thr Gln Leu Leu His Ala Met Asn Lys Gly Ile Phe Glu Lys Glu His
 20 25 30
 Pro Ile Ala Leu Ser Leu Leu Ser Ala Ile Ser Gly Glu Ser Ile Phe
 35 40 45
 Phe Leu Gly Pro Pro Gly Val Ala Lys Ser Leu Ile Ala Arg Arg Leu
 50 55 60
 Lys Leu Ala Phe Asp Gln Ser Thr Ala Phe Glu Tyr Leu Met Ser Arg
 65 70 75 80
 Phe Ser Thr Pro Asp Glu Ile Phe Gly Pro Val Ser Ile Ser Lys Leu
 85 90 95
 Lys Asp Glu Asp Lys Tyr Glu Arg Ile Ile Glu Gly Tyr Leu Pro Ser
 100 105 110
 Ala Thr Ile Val Phe Leu Asp Glu Ile Trp Lys Ala Gly Pro Ser Ile
 115 120 125
 Gln Asn Ser Leu Leu Thr Val Ile Asn Glu Lys Val Tyr Arg Asn Gly
 130 135 140
 Gln Tyr Thr Ile Gln Leu Pro Leu Lys Gly Leu Ile Ala Ala Ser Asn
 145 150 155 160
 Glu Leu Pro Ala Gln Gly Glu Gly Leu Glu Ala Leu Trp Asp Arg Phe

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165      170      175
Leu Ile Arg Tyr Phe Ile Gly Asn Ile Glu Gln Glu Phe Ala Phe Asp
180      185      190
Gln Met Ile Ala Ser Val Asn Asp Met Glu Ala Glu Ile Pro Thr Gly
195      200      205
Leu Ser Ile Thr Glu Glu Gln Tyr Thr Asp Trp Arg Thr Gln Ile Ser
210      215      220
Gln Ile Lys Ile His Tyr Thr Val Phe Glu Leu Ile His Ser Ile Lys
225      230      235      240
Arg Gln Ile Glu Lys Tyr Asn Ile Gln Lys Glu Glu Val Pro His Ser
245      250      255
Thr Leu Tyr Ile Ser Asp Arg Arg Trp Lys Lys Ile Val Ser Leu Leu
260      265      270
Arg Thr Ser Ala Phe Leu Asn Glu Thr Asp Thr Ile Arg Phe Ser Asp
275      280      285
Cys Thr Leu Leu Leu His Cys Leu Trp Asn Glu Ile Glu Gln Ile Pro
290      295      300
Ile Ile Glu Gln Met Val Ser Ser Ala Leu Asp Glu Cys Ile Ser His
305      310      315      320
Tyr Leu Cys Gly Glu Arg Thr Leu Glu Gln Lys Leu Ser Ser Ile Arg
325      330      335
Glu Asp Met Lys Ser Glu His Ser Leu Arg Glu Thr Lys Asp Pro Ala
340      345      350
Leu Gln Ile Val Asp Thr Phe Tyr His Gln Ile Glu Arg Tyr Pro Val
355      360      365
Ala Gly Asn Leu Leu Ile Phe Ala Ser Asp Tyr Gln Ser Leu Gln Lys
370      375      380
Asp Thr Gln Lys Leu Phe Tyr Ile Gln Arg Asp Lys Tyr Arg Pro Val
385      390      395      400
Asn Trp Ile Leu Lys Val Tyr Asp His Val Arg Asn Arg Asn Ile Ser
405      410      415
Gln Ser Ala Ile Val Ser Leu Lys Lys Gly Thr Arg Ser Val Phe Ile
420      425      430
Asn Asn Gln Glu Tyr Pro Leu Ala Cys Asn Ala Gly Tyr Asp Ile Ala
435      440      445
Tyr Pro Gln Glu Ala Ser Leu Pro Phe Glu Phe Arg Phe Gln Glu Val
450      455      460
Ile Asp Leu Tyr His Asn Arg Glu Asn Glu Leu Lys Arg Met Thr Asp
465      470      475      480
Ile Glu Leu Thr Tyr Cys Lys Glu His Leu Phe Met Asp Asp Lys Gln
485      490      495
Arg Asn Met Val Lys Gln Ile Leu Asn Arg Gln Lys Glu Met Leu Glu
500      505      510
Ile Tyr Gln Asn Glu Ile Arg Glu Ile Ala Tyr Thr His Gly Leu Glu
515      520      525
Asn Lys Glu Tyr
530

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<210> 5529

<211> 996

<212> PRT

<213> B.fragilis

<400> 5529

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Ser Lys Gln Lys Ile Gln Gln Thr Gly Lys Arg Ile His Ala Ala Pro
1      5      10      15
Leu Pro Asn Gly Ile Gln Lys His His Arg Leu Ser Val Val Cys Arg
20      25      30
Arg Arg Asn Asn Arg Lys Ser Met Lys Thr Phe Leu Gln Leu Val Ala

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35	40	45
Gln Asp Leu Tyr Cys Lys Ile Gly Asn Asp Leu Ser Arg Thr Ala Ile		
50	55	60
Ile Phe Pro Asn Lys Arg Ala Ser Leu Phe Phe Asn Glu His Leu Ala		
65	70	75
Asn Gln Ser Asp Gln Pro Leu Trp Ser Pro Ala Tyr Leu Ser Ile Ser		
85	90	95
Glu Leu Phe Gln His Leu Ser Val Leu Lys Leu Gly Asp Pro Ile Arg		
100	105	110
Leu Val Cys Glu Leu Tyr Lys Ile Phe Arg Glu Glu Thr Asn Ser Asp		
115	120	125
Glu Ser Leu Asp Asp Phe Tyr Phe Trp Gly Glu Leu Leu Ile Ser Asp		
130	135	140
Phe Asp Asp Val Asp Lys Asn Leu Val His Ala Asp Lys Leu Phe Thr		
145	150	155
Asn Leu Gln Asp Leu Lys Asn Val Met Asp Asp Tyr Glu Phe Leu Asp		
165	170	175
Gln Glu Gln Glu Gln Ala Ile Gln Gln Phe Phe Gln Asn Phe Ser Ile		
180	185	190
Glu Lys Arg Thr Leu Leu Lys Glu Lys Phe Ile Ser Leu Trp Asp Lys		
195	200	205
Leu Gly Asp Ile Tyr Arg Arg Tyr His Lys Lys Leu Glu Glu Leu Gly		
210	215	220
Phe Ala Tyr Glu Gly Met Leu Tyr Arg Asn Val Ile Glu Gln Leu Glu		
225	230	235
Pro Asp Ser Leu Lys Tyr Asp Cys Tyr Val Phe Val Gly Phe Asn Val		
245	250	255
Leu Asn Lys Val Glu Thr His Phe Phe Gln Gln Leu Gln Asn Ala Gly		
260	265	270
Lys Ala Leu Phe Tyr Trp Asp Tyr Asp Val Phe Tyr Thr Gln Leu Pro		
275	280	285
Ser Arg Gln Lys Gln Arg His Glu Ala Gly Glu Phe Ile Asn Arg Asn		
290	295	300
Leu Lys Leu Phe Pro Asn Glu Leu Pro Ala Glu Leu Phe Asn Glu Leu		
305	310	315
Ile Lys Pro Lys Lys Val Arg Phe Ile Ser Ser Pro Thr Glu Asn Ala		
325	330	335
Gln Ala Arg Tyr Leu Pro Gln Trp Val His Glu Asn Leu Ser Asn Glu		
340	345	350
Glu Lys Glu Asn Ala Val Val Leu Cys Asn Glu Ala Leu Leu Pro		
355	360	365
Val Leu His Ser Ile Pro Glu Val Val Arg Asn Val Asn Ile Thr Met		
370	375	380
Gly Phe Pro Leu Ala Gln Thr Pro Val Tyr Ser Phe Ile Asn Ala Ile		
385	390	395
Leu Glu Leu Gln Thr Ser Gly Tyr Arg Thr Asp Ser Gly Arg Tyr Ile		
405	410	415
Tyr Asp Ala Val Gln Thr Val Leu Lys His Pro Tyr Thr Arg Arg Leu		
420	425	430
Ser Asp Lys Ala Glu Pro Leu Gln Arg Glu Leu Thr Lys Thr Asn Arg		
435	440	445
Phe Tyr Pro Phe Pro Ser Glu Leu Lys Lys Asp Lys Phe Leu Asp Ile		
450	455	460
Leu Phe Thr Pro Arg Asn Gly Ile Arg Glu Leu Cys Val Tyr Ile Thr		
465	470	475
Glu Leu Leu Lys Glu Val Ser Val Leu Tyr Arg Gln Glu Gln Glu Ser		
485	490	495
Asp Asp Ile Phe Asn Gln Leu Tyr Arg Glu Ser Leu Phe Lys Ser Phe		
500	505	510

Thr Leu Val Asn Arg Leu Leu Asn Leu Ile Asp Asn Asn Glu Leu Gln
 515 520 525
 Val Arg Ile Glu Thr Leu Lys Arg Leu Leu Asn Lys Ile Leu Asn Ala
 530 535 540
 Ala Asn Ile Pro Phe His Gly Glu Pro Ala Ile Gly Met Gln Ile Met
 545 550 555 560
 Gly Val Leu Glu Thr Arg Asn Leu Asp Phe Arg Asn Leu Leu Leu Leu
 565 570 575
 Ser Leu Asn Glu Gly Gln Leu Pro Lys Ser Gly Gly Glu Ser Ser Phe
 580 585 590
 Ile Pro Tyr Asn Leu Arg Lys Ala Phe Gly Met Thr Thr Ile Glu His
 595 600 605
 Lys Asn Ala Val Tyr Ala Tyr Tyr Phe Tyr Arg Leu Ile Gln Arg Ala
 610 615 620
 Glu Asn Ile Thr Leu Met Tyr Asn Thr Ser Ser Asp Gly Leu Asn Arg
 625 630 635 640
 Gly Glu Trp Ser Arg Phe Met Leu Gln Phe Leu Ile Glu Trp Pro His
 645 650 655
 Glu Ile Ser Arg Glu Tyr Leu Glu Ala Gly Gln Ser Pro Gln Asn Ser
 660 665 670
 Lys Glu Ile Arg Ile Thr Lys Thr Pro Glu Ile Ile Asp Arg Leu Tyr
 675 680 685
 Arg Thr Tyr Asp Phe Ser Arg Asn Pro Asp Ala Leu Ile Leu Ser Pro
 690 695 700
 Ser Ala Leu Asn Thr Tyr Leu Asp Cys Arg Leu Lys Phe Tyr Phe Arg
 705 710 715 720
 Tyr Val Ala Arg Leu Lys Ala Pro Asp Glu Val Ser Ala Glu Ile Asp
 725 730 735
 Ser Ala Leu Phe Gly Thr Ile Phe His Arg Ser Ala Gln Leu Val Tyr
 740 745 750
 Leu Asp Leu Thr Ala Asn Lys Arg Asp Val His Lys Glu Asp Leu Glu
 755 760 765
 Arg Leu Leu Arg Asp Asn Ile Arg Leu Gln Asn Tyr Val Asp Ile Ala
 770 775 780
 Phe Lys Glu Ile Phe Phe His Val Pro Ile Asp Glu Lys Pro Glu Tyr
 785 790 795 800
 Asn Gly Ile Gln Leu Ile Asn Ser Lys Val Ile Thr Ser Tyr Leu Arg
 805 810 815
 Gln Leu Leu Arg Asn Asp Leu Gln Tyr Ala Pro Phe Arg Met Met Gly
 820 825 830
 Met Glu Gln Glu Val Val Glu Asp Ile Arg Ile Glu Gly Pro Val Gly
 835 840 845
 Lys Leu Ser Leu Arg Ile Gly Gly Thr Ile Asp Arg Met Asp Ser Lys
 850 855 860
 Glu Gly Thr Leu Arg Ile Val Asp Tyr Lys Thr Gly Gly Ser Pro Lys
 865 870 875 880
 Val Pro Thr Asn Ile Glu Gln Leu Phe Thr Pro Ala Glu Gly Arg Pro
 885 890 895
 Asn Tyr Ile Phe Gln Thr Phe Leu Tyr Ala Ala Ile Met Ala Arg Gln
 900 905 910
 Gln Ala Leu Lys Val Ala Pro Ser Leu Leu Tyr Ile His Arg Ala Ala
 915 920 925
 Ser Glu Ser Tyr Ser Pro Val Ile Glu Ile Gly Glu Ala Arg Lys Pro
 930 935 940
 Lys Leu Pro Val Asp Asp Phe Ser Val Tyr Glu Asp Glu Phe Arg Glu
 945 950 955 960
 Arg Leu Leu Lys Leu Leu Glu Glu Ile Tyr Asp Asp Lys Glu Glu Phe
 965 970 975
 Thr Gln Thr Glu Asp Thr Lys Lys Cys Glu Tyr Cys Asp Phe Lys Ala

980
Met Cys Lys Arg
995

985

990

<210> 5530
<211> 60
<212> PRT
<213> B.fragilis

<400> 5530
Tyr Arg Gln Lys Lys Gly Pro Val Ser Ala Lys Pro Ser Leu Ser Phe
1 5 10 15
Met Glu Leu Lys His Tyr Ser Asp Leu Met Leu Phe Thr Gly Phe Ser
20 25 30
Leu Ala Ile Cys Gln Asp Leu Pro Ile Met Lys Thr Lys Ile Lys Thr
35 40 45
Asn Lys Gln Ile Ala Val Thr Thr Tyr Gln Pro Ala
50 55 60

<210> 5531
<211> 122
<212> PRT
<213> B.fragilis

<400> 5531
Lys Ser Lys Asn Met Lys Val Ile Asp Leu Thr Lys Glu Ser Phe Val
1 5 10 15
Glu Lys Val Ala Glu Phe Gln Glu Tyr Pro Asn Lys Trp Asp Phe Lys
20 25 30
Gly Asp Lys Pro Cys Leu Val Asp Phe His Ala Pro Trp Cys Val Tyr
35 40 45
Cys Lys Ala Leu Ser Pro Ile Leu Asp Gln Leu Ala Val Glu Tyr Asp
50 55 60
Gly Lys Ile Asp Ile Tyr Lys Val Asp Val Asp Gln Glu Pro Glu Leu
65 70 75 80
Glu Ala Ala Phe Ala Ile Arg Thr Ile Pro Asn Leu Leu Leu Cys Pro
85 90 95
Met Gly Gly Lys Pro Ser Met Lys Leu Gly Thr Met Asn Lys Thr Gln
100 105 110
Leu Lys Ala Leu Ile Glu Glu Val Leu Leu
115 120

<210> 5532
<211> 448
<212> PRT
<213> B.fragilis

<400> 5532
Val Glu Lys Lys Lys Met Lys Lys Ile Tyr Val Leu Ala Leu Leu Ser
1 5 10 15
Cys Leu Leu Met Leu Ser Ala Cys Asp Ser Tyr Leu Asp Ile Arg Pro
20 25 30
Val Gly Ser Val Ile Pro Gln Thr Ala Glu Glu Tyr Arg Ala Leu Leu
35 40 45
Ala Arg Ala Tyr Leu Asn Val Pro Asn Asp Arg Gly Leu Ala Cys Leu
50 55 60
Arg Ser Asp Glu Met Leu Val Asn Asp Asn Glu Tyr Asp Arg Asn Ser
65 70 75 80
Tyr Gly Asp Ile Glu Arg Trp Asn Asp Val Ser Pro Phe Pro Gly Thr

50	55	60
Ile Ala Val Cys Gly Arg Asn Ser Ala His Trp Ala Val Thr Phe Leu		
65	70	75
Ala Thr Val Thr Tyr Gly Ala Val Ile Val Pro Ile Leu His Glu Phe		80
	85	90
Lys Ala Asp Asn Ile His Asn Ile Val Asn His Ser Glu Ala Lys Leu		95
	100	105
Leu Phe Val Gly Asp Gln Val Trp Glu Asn Leu Asn Glu Asp Arg Met		110
	115	120
Pro Leu Leu Glu Gly Ile Ser Ser Leu Thr Asp Phe Thr Pro Leu Val		125
	130	135
Ser Arg Asn Asp Lys Leu Thr Tyr Ala His Glu His Arg Asn Glu Ile		140
145	150	155
Tyr Gly Gln Arg Tyr Pro Lys Asn Phe Arg Pro Glu His Ile Ser Tyr		160
	165	170
Arg Lys Asp Met Pro Glu Glu Leu Ala Val Ile Asn Tyr Thr Ser Gly		175
	180	185
Thr Thr Gly Tyr Ser Lys Gly Val Met Leu Pro Tyr Arg Arg Leu Trp		190
	195	200
Ser Asn Ile Ala Tyr Cys His Glu Met Leu Pro Val Lys Pro Gly Asp		205
	210	215
His Ile Val Ser Met Leu Pro Met Gly His Val Phe Gly Met Val Tyr		220
225	230	235
Asp Phe Leu Tyr Gly Phe Ser Ala Gly Ala His Leu Tyr Phe Leu Thr		240
	245	250
Arg Met Pro Ser Pro Lys Ile Ile Ala Gln Ser Phe Ala Glu Ile Lys		255
	260	265
Pro Arg Val Ile Ala Cys Val Pro Leu Ile Val Glu Lys Ile Ile Lys		270
	275	280
Lys Asp Ile Leu Pro Lys Leu Asp Asn Lys Ile Gly Lys Leu Leu Leu		285
	290	295
Arg Val Pro Ile Val Asn Asp Lys Ile Lys Ala Ala Ala Arg Gln Ala		300
305	310	315
Ala Met Glu Ile Phe Gly Gly Asn Phe Asp Glu Ile Ile Ile Gly Gly		320
	325	330
Ala Pro Phe Asn Ala Glu Val Glu Ala Phe Leu Lys Gln Ile Gly Phe		335
	340	345
Pro Tyr Thr Ile Ala Tyr Gly Met Thr Glu Cys Gly Pro Ile Ile Cys		350
	355	360
Ser Ser Arg Trp Glu Thr Leu Lys Gln Ala Ser Cys Gly Lys Ala Thr		365
	370	375
Ser Arg Met Glu Val Lys Ile Asp Ser Pro Asp Pro Glu Asn Ile Ala		380
385	390	395
Gly Glu Ile Ile Cys Lys Gly Thr Asn Leu Met Leu Gly Tyr Tyr Lys		400
	405	410
Asn Thr Glu Ala Thr Ser Gln Ile Ile Asp Val Asn Gly Trp Leu His		415
	420	425
Thr Gly Asp Leu Ala Thr Met Asp Ser Glu Gly Tyr Val Thr Val Arg		430
	435	440
Gly Arg Ser Lys Asn Met Leu Leu Thr Ser Ser Gly Gln Asn Ile Tyr		445
	450	455
Pro Glu Glu Ile Glu Ser Lys Phe Asn Asn Met Pro Tyr Val Ser Glu		460
465	470	475
Ser Leu Val Leu Leu Gln Lys Asp Lys Leu Val Ala Leu Ile Tyr Pro		480
	485	490
Asp Phe Asp Asp Ala Phe Ala His Gly Leu Leu Gln Ser Asp Ile Glu		495
	500	505
Lys Ile Met Glu Thr Asn Arg Ile Glu Leu Asn Gln Gln Leu Pro Ala		510
	515	520
		525

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Tyr Cys Gln Ile Thr Lys Ile Lys Ile His Phe Glu Glu Phe Glu Lys
 530 535 540
 Thr Ala Lys Lys Ser Ile Lys Arg Phe Met Tyr Gln Glu Ala Lys Gly
 545 550 555 560

<210> 5534
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 5534
 Gly Ile Met Lys Glu Leu His Leu Asn Ile Val Ser Pro Glu Lys Glu
 1 5 10 15
 Val Phe Asn Gly Glu Val Lys Ser Val Thr Leu Pro Gly Thr Ser Gly
 20 25 30
 Val Phe Ser Ile Leu Pro Gln His Ala Pro Ile Val Ser Ser Leu Gln
 35 40 45
 Glu Gly Thr Val Ser Tyr Thr Thr Thr Asp Gly Glu Glu His Thr Leu
 50 55 60
 Asp Ile His Ser Gly Phe Val Glu Leu Ser Asn Gly Glu Ala Ser Val
 65 70 75 80
 Cys Val Ser

<210> 5535
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 5535
 Lys Arg Lys Asn Thr Met His Lys Phe Ile Asp Asn Ile Val Ala Phe
 1 5 10 15
 Ser Leu Lys Asn Lys Phe Phe Ile Phe Phe Cys Thr Thr Ile Ala Val
 20 25 30
 Ile Ala Gly Val Val Ser Phe Lys His Thr Pro Ile Asp Ala Phe Pro
 35 40 45
 Asp Val Thr Asn Thr Lys Val Thr Ile Ile Thr Gln Trp Ala Gly Arg
 50 55 60
 Ser Ala Glu Glu Val Glu Lys Phe Ile Thr Ile Pro Val Glu Ile Ala
 65 70 75 80
 Met Asn Ser Val Gln Lys Lys Thr Asp Ile Arg Ser Thr Thr Leu Phe
 85 90 95
 Gly Leu Ser Val Ile Asn Val Leu Phe Glu Asp His Val Asp Asp Phe
 100 105 110
 Val Ala Arg Gln Gln Val Tyr Asn Leu Leu Asn Asp Ala Asp Leu Pro
 115 120 125
 Asp Gly Val Thr Pro Glu Val Gln Pro Leu Tyr Gly Pro Thr Gly Glu
 130 135 140
 Ile Tyr Arg Tyr Thr Leu Arg Ser Asp Lys Arg Ser Val Arg Glu Leu
 145 150 155 160
 Lys Thr Ile Gln Asp Trp Val Ile Asp Arg Asn Leu Arg Ala Val Ser
 165 170 175
 Glu Val Thr Asp Ile Val Ser Phe Asp Gly Glu Val Phe
 180 185

<210> 5536
 <211> 76
 <212> PRT
 <213> B.fragilis

1000 900 800 700 600 500 400 300 200 100 0

<400> 5536

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Ser Phe Arg Lys Cys Lys Ser Glu Met Lys Val Leu Asn Ala Asn Ile
1           5           10           15
Glu Glu Ile His Val Arg Val Lys Pro Ile Lys Thr Ser Tyr Cys Leu
           20           25           30
Met Leu Gln Ser Lys Ala Leu Ile Pro Asp Asn Thr Pro Tyr Pro Leu
           35           40           45
Leu Phe Ile Leu Leu Asn Ile Leu Tyr Cys Val Ile Arg Pro Lys Ile
           50           55           60
Asn Ile Ser Leu Trp Leu Tyr Val Ser Tyr Leu Leu
65           70           75

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<210> 5537

<211> 248

<212> PRT

<213> B.fragilis

<400> 5537

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Met Ile Arg Asn Lys Val Met Glu Gln Ser Phe Ile Glu Tyr Ser Leu
1           5           10           15
Gly Lys Asp Ala Ser Ser Ala Val Leu Trp Val Tyr Pro Val Arg Lys
           20           25           30
Pro Arg Gly Lys Ala Ile Ile Met Cys Pro Gly Gly Gly Phe Asn Gln
           35           40           45
Ile Ala Ser Asp His Glu Gly Arg Asp Phe Ala Ala Trp Phe Asn Asn
           50           55           60
Gln Gly Ile Thr Tyr Ala Val Leu Asn Tyr Arg Met Pro Asn Gly Asp
65           70           75           80
Val Glu Val Ile Arg Glu Asp Ile Arg Glu Ala Ile Arg Leu Ile Arg
           85           90           95
Arg Gln Ser Ala Glu Trp Gly Ile His Gln Leu Gly Val Met Gly Ala
           100          105          110
Ser Ile Gly Gly Tyr Ile Ala Ala Thr Ala Ala Thr Leu Tyr Thr Gly
           115          120          125
Thr Asp Arg Pro Asp Phe Gln Val Leu Leu Tyr Pro Val Ile Ser Met
           130          135          140
Thr Asp Arg Leu Thr His Trp Pro Ser Arg Glu Arg Met Leu Gly Glu
145          150          155          160
Thr Ile Ser Glu Gly Leu Lys Glu Thr Leu Ser Leu Glu Leu His Val
           165          170          175
Thr Ala Asp Thr Pro Pro Thr Phe Ile Val Leu Ala Glu Asp Asp Gln
           180          185          190
Ala Val Ser Pro Leu Asn Ser Ile Val Tyr Tyr Thr Ala Leu Leu Lys
           195          200          205
His Gly Val Ser Ala Gly Leu His Ile Tyr Pro Glu Gly Gly His Ser
           210          215          220
Phe Gly Phe Arg Asp Ser Phe Ile Tyr Lys Glu Leu Trp Thr Asp Glu
225          230          235          240
Leu Gln Lys Trp Leu Leu Thr Phe
           245

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<210> 5538

<211> 67

<212> PRT

<213> B.fragilis

<400> 5538

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Arg Glu Ser Asp Lys Ile Lys Asp Leu Phe Ile Phe Arg Leu Pro Ile

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1           5           10           15
Leu Lys Ile Ala Ser Lys Asp Ile Leu Glu Gln Thr Ala Leu Ser Thr
      20           25           30
Ser Phe Gly Asn Ser Ser Ala Thr Val Asp Ala Ile Gly Ile Asn Val
      35           40           45
Tyr Asp Pro Ala Phe Pro Leu Ile Thr Pro Ser Leu Ile His Ser Val
      50           55           60
Phe Thr Met
65

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<210> 5539

<211> 254

<212> PRT

<213> B.fragilis

<400> 5539

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Val Leu Arg Glu Ala Ile Pro Ala Ala Leu Ser Ile Pro Gly Arg Glu
1           5           10           15
Gly Tyr Pro Val Tyr Ala Ile Phe Ala Ile Lys Thr Ala Gly Leu Asp
      20           25           30
Glu Glu Gly Tyr Pro Leu Phe Tyr Asp Lys Glu Gly Lys Lys Val Thr
      35           40           45
Leu Lys Glu Leu Tyr Arg Trp Gln Asp Pro Phe Gly Leu Gly Phe Thr
      50           55           60
Val Asn Ser Asp Val Thr Pro Ala Glu Glu Arg Ser Phe Tyr Ser Tyr
65           70           75           80
Ile Gly Ser Gln Asp Thr Pro Tyr Thr Gly Gly Leu Ile Asn Thr Phe
      85           90           95
Ser Tyr Lys Asn Trp Glu Leu Thr Ala Asn Leu Ser Phe Asn Leu Gly
      100          105          110
Gly Tyr Val Arg Thr Thr Pro Ser Tyr Asn Phe Ile Asn Phe Asp Arg
      115          120          125
Gly Gln Asn Val Asn Ser Asp Ile Leu Asp Arg Trp Thr Pro Glu Asn
      130          135          140
Thr Asp Gly Arg Leu Pro Ala Leu Ile Thr Ser Glu Lys Arg Ala Asp
145          150          155          160
Glu Tyr Tyr Trp Tyr Asp Gln Lys Ser Glu Ile Tyr Lys Asn Leu Asp
      165          170          175
Ile Trp Val Lys Lys Leu Asn Tyr Phe Arg Leu Gln Asn Leu Arg Leu
      180          185          190
Gly Tyr Arg Leu Pro Glu Lys Met Thr Lys Ser Leu Gly Met Gly Ser
      195          200          205
Ala Ser Val Ala Ile Glu Gly Arg Asn Leu Leu Val Phe Gly Ser Ser
      210          215          220
Tyr Lys Asn Phe Leu Asp Pro Glu Ser Met Tyr Asn Pro Tyr Ala Pro
225          230          235          240
Pro Ile Pro Lys Ser Ile Thr Phe Ser Leu Asn Leu Asn Phe
      245          250

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<210> 5540

<211> 349

<212> PRT

<213> B.fragilis

<400> 5540

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His Leu Arg Glu Glu Ser Leu Ser Phe Ala Trp Tyr Leu Lys Arg Glu
1           5           10           15
Lys Ala Met Tyr Lys Gln Thr Ile Arg Pro Val Leu Phe Leu Met Glu
      20           25           30

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Met Leu His Asp Tyr Ser Arg Phe Arg Val Glu Thr Ile Asp Ser Phe
 100 105 110
 Phe Gln Ser Val Met Arg Asn Leu Ala Arg Glu Leu Glu Leu Ser Pro
 115 120 125
 Asn Leu Asn Ile Glu Leu Asn Asn Val Glu Val Leu Ser Asp Ala Val
 130 135 140
 Asp Ser Met Ile Glu Lys Leu Gly Pro Asn Ser Pro Val Leu Val Trp
 145 150 155 160
 Leu Leu Asp Tyr Ile Asp Glu Arg Ile Ala Asp Asp Lys Arg Trp Asn
 165 170 175
 Val Ser Asp Glu Ile Lys Ser Phe Gly Arg Asn Ile Phe Asp Glu Gly
 180 185 190
 Tyr Ile Glu Lys Gly Asp Gly Leu Arg Arg Arg Leu Arg Asp Pro Asn
 195 200 205
 Val Ile His Asn Tyr Arg Lys Thr Leu Lys Glu Met Glu Thr Ala Ala
 210 215 220
 Leu Glu Gln Met Lys Glu Phe Ala Gln Gln Phe Glu Asn Val Leu Ser
 225 230 235 240
 Ser Gln Ser Leu Lys Pro Thr Asp Leu Lys Asn Gly Ala Lys Gly Ile
 245 250 255
 Gly Ser Tyr Phe Asn Lys Leu Lys Asn Gly Ile Leu Gly Asp Glu Ile
 260 265 270
 Val Asn Ala Thr Val Ile Lys Cys Leu Asp Asp Glu Thr Asn Trp Ala
 275 280 285
 Ala Lys Thr Ser Lys Gln Tyr Thr Asp Ile Ile Leu Leu Ala Ser Ser
 290 295 300
 Ile Leu Met Pro Leu Leu Gln Asn Ala Glu Gln Tyr Arg Ser Arg Asn
 305 310 315 320
 Asn Arg Ile Val Asn Ser Cys Arg Leu Ser Thr Gln His Leu Ser Lys
 325 330 335
 Val Arg Leu Leu Thr Asn Ile Asp Glu Glu Val Arg Gln Leu Asn Arg
 340 345 350
 Glu Asn Asn Arg Phe Leu Leu Ser Asp Thr Asn Ala Leu Leu His Gln
 355 360 365
 Leu Val Lys Asp Gly Asp Ser Ser Phe Val Phe Glu Lys Ile Gly Thr
 370 375 380
 Asn Ile Arg Asn Val Met Ile Asp Glu Phe Gln Asp Thr Ser Arg Met
 385 390 395 400
 Gln Trp Asp Asn Phe Lys Leu Leu Leu Leu Glu Gly Leu Ser Gln Gly
 405 410 415
 Ala Asp Ser Leu Ile Val Gly Asp Val Lys Gln Ser Ile Tyr Arg Trp
 420 425 430
 Arg Asn Gly Asp Trp Gly Ile Leu Asn Gly Leu Asn Lys Gln Leu Gly
 435 440 445
 Tyr Phe Ser Ile Arg Thr Glu Thr Leu Lys Thr Asn Arg Arg Ser Glu
 450 455 460
 Thr Asn Ile Ile Arg Phe Asn Asn Ser Ile Phe Ser Ala Ala Val Asp
 465 470 475 480
 Tyr Leu Asn Glu Met Tyr Asn Lys Gln Leu Gly Ser Ile Cys Glu Pro
 485 490 495
 Leu Ile Asn Ala Tyr Ala Asp Val Glu Gln Glu Ser Pro Arg Asn Lys
 500 505 510
 Gln Gln Gly Tyr Val Lys Val Glu Phe Leu Glu Pro Asp Glu Glu His
 515 520 525
 Asp Tyr Thr Glu Gln Thr Leu Ile Ser Leu Gly Met Glu Val Glu His
 530 535 540
 Leu Leu Gln Ser Gly Val Lys Leu Asn Asp Ile Ala Ile Leu Val Arg
 545 550 555 560
 Lys Asn Lys Ser Ile Pro Arg Ile Ala Asp Tyr Phe Asp Lys Gln Leu

[illegible]

Asn Ile Thr Gly Tyr Leu Trp Tyr Val Glu Glu Glu Ile Ile Glu Lys
 1045 1050 1055
 Val

<210> 5542
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 5542

Phe Met Asn Trp Thr Lys Tyr Leu Pro Cys Leu Leu Ile Leu Gly Met
 1 5 10 15
 Gly Ser Gly Cys Ser Ser Glu Val Lys His Pro Gly Glu Asn Gln Asp
 20 25 30
 Leu Cys Leu Thr Asp Ser Leu Leu Lys Ile Val Ser Val Asp Thr Val
 35 40 45
 His Leu His Asp Val Ala Asp Glu Leu Thr Leu Asn Gly Arg Val Thr
 50 55 60
 Phe Asn Gln Glu Gln Val Ala His Val Tyr Pro Met Phe Gly Gly Thr
 65 70 75 80
 Val Thr Glu Leu Arg Ala Glu Val Gly Asp Tyr Val Arg Lys Gly Asp
 85 90 95
 Ile Leu Ala Ile Leu Arg Ser Gly Glu Val Ala Asp Tyr Glu Arg Gln
 100 105 110
 Met Lys Glu Ala Glu Gln Gln Val Ile Ile Ala Arg Arg Asn Val Asn
 115 120 125
 Ala Thr Arg Asp Met Phe Asp Ser Gly Leu Ala Ser Asp Lys Asp Val
 130 135 140
 Leu Gln Ala Arg Gln Glu Leu Ile Asn Ala Glu Ala Glu Glu Asn Arg
 145 150 155 160
 Ile Lys Glu Ile Phe Ser Ile Asn Asn Phe Ser Gly Arg Ser Phe Tyr
 165 170 175
 Glu Val Lys Ser Pro Val Ser Gly Phe Ile Val Glu Lys Ser Val Ser
 180 185 190
 Arg Asn Met Gln Leu Arg Pro Asp Gln Gly Glu Glu Ile Phe Thr Val
 195 200 205
 Ser Gly Leu Glu His Val Trp Val Met Ala Asp Val Tyr Glu Ser Asp
 210 215 220
 Ile Ser Lys Val Ala Glu Gly Ala Ser Val His Ile Thr Thr Leu Ala
 225 230 235 240
 Tyr Pro Gly Lys Val Phe Ser Gly Asn Ile Asp Lys Val Tyr His Met
 245 250 255
 Leu Asn Thr Glu Ser Lys Thr Met Asn Val Arg Val Lys Leu Cys Asn
 260 265 270
 Glu Asp Tyr Leu Leu Lys Pro Gly Met Phe Thr Thr Val Asn Val Glu
 275 280 285
 Cys Lys Ser Ser Gly Lys Gln Met Pro Arg Ile Asn Ala His Ala Leu
 290 295 300
 Ile Phe Glu Gly Gly Lys Asn Tyr Val Val Thr Val Thr Pro Asp Asn
 305 310 315 320
 Arg Leu Lys Val Lys Glu Val Asp Val Tyr Lys Arg Gln Asn Gln Glu
 325 330 335
 Cys Tyr Val Arg Ser Gly Leu Ser Glu Gly Asp Arg Val Leu Asn Gln
 340 345 350
 Asn Val Leu Leu Val Tyr Asn Ser Leu Asn Ala Asp
 355 360

<210> 5543

<211> 208
 <212> PRT
 <213> B.fragilis

<400> 5543

Val	Pro	Ser	Cys	Val	Ser	Thr	Trp	Tyr	Glu	Thr	Leu	Phe	Ser	Ala	Gly
1			5						10					15	
Tyr	Gly	Phe	Asp	Arg	Gln	Thr	Leu	Thr	Thr	Lys	Pro	Val	Val	Phe	Pro
			20					25					30		
Asp	Glu	Asp	Arg	Ala	Arg	Gln	Phe	Pro	Leu	His	Gln	Lys	Thr	Tyr	Lys
		35					40					45			
Glu	Asn	Ala	Tyr	Val	Ser	Phe	Phe	Ser	Thr	Ala	Ser	Tyr	Ser	Leu	Met
	50					55					60				
Asn	Arg	Tyr	Thr	Phe	Gly	Gly	Ser	Ile	Arg	Phe	Asp	Gly	Ser	Asp	Leu
65					70				75					80	
Phe	Gly	Val	Asp	Lys	Lys	Tyr	Arg	Tyr	Leu	Pro	Leu	Tyr	Ser	Val	Ser
			85						90					95	
Gly	Leu	Trp	Arg	Leu	Ser	Asn	Glu	Pro	Phe	Met	Gln	Gly	Thr	Arg	Lys
			100					105					110		
Trp	Met	Asp	Asn	Leu	Ala	Phe	Arg	Val	Ser	Tyr	Gly	Ile	Gln	Gly	Asn
		115					120					125			
Ile	Asp	Lys	Asn	Thr	Ser	Pro	Phe	Leu	Leu	Gly	Lys	Tyr	Ile	Val	Asp
	130					135					140				
Asn	Ile	Leu	Pro	Gly	Gly	Ser	Glu	His	Met	Ile	Asp	Ile	Asn	Ser	Ala
145					150				155						160
Pro	Asn	Lys	Lys	Leu	Arg	Trp	Glu	Lys	Thr	Gln	Ser	Val	Asn	Val	Gly
			165					170						175	
Leu	Asp	Phe	Ser	Val	Leu	Asn	Gln	Ala	Leu	Asn	Leu	Ser	Val	Asp	Tyr
			180					185					190		
Tyr	Tyr	Arg	Lys	Gly	Thr	Asp	Leu	Phe	Arg	Ser	Ser	Asn	Asp	Ser	Thr
		195					200					205			

<210> 5544
 <211> 857
 <212> PRT
 <213> B.fragilis

<400> 5544

Thr	Tyr	Gly	Trp	Gln	His	Pro	Lys	Arg	Val	Gln	Thr	Ser	Gln	Ser	Phe
1				5					10					15	
Cys	Leu	Asn	Trp	Tyr	Arg	His	Ser	Met	Leu	Gln	Asp	Lys	Leu	Ser	Ala
		20						25					30		
Pro	Arg	His	Gln	Glu	Pro	Lys	Cys	Leu	Phe	Leu	Gln	Met	Arg	Gln	His
		35					40					45			
Leu	Thr	Ser	Asn	Lys	Glu	Ser	Leu	Phe	Gly	Ser	Lys	Pro	Thr	Ala	Gln
	50					55					60				
Arg	Phe	Val	Leu	Pro	Lys	Cys	Pro	Phe	Trp	Gln	Ala	Ile	Leu	Cys	Leu
65					70					75				80	
Gln	Val	Leu	Ser	Tyr	Tyr	Leu	Ile	Leu	Leu	Ile	His	Ala	Gln	Lys	Tyr
			85						90					95	
Lys	Lys	Arg	Lys	Arg	Thr	Pro	Tyr	Lys	Thr	Arg	Lys	Lys	Thr	Ile	Phe
			100					105					110		
Thr	Asp	Asp	Lys	Phe	Glu	Leu	Leu	Met	Glu	Arg	Asp	Glu	Phe	Phe	Thr
		115					120					125			
Lys	Glu	Glu	Arg	Glu	Leu	Leu	Phe	Ser	Leu	Tyr	Lys	Lys	Leu	Leu	Arg
	130					135					140				
Leu	Thr	Gly	Glu	Thr	Leu	Gln	Lys	Gly	Asp	Cys	Arg	Lys	Leu	Lys	Lys
145					150					155					160
His	Leu	Ile	Asp	Ser	Thr	Gln	Asn	Asn	Thr	Met	Gln	Arg	Asp	Ser	Phe

Met Met Arg Leu Ile Lys Arg Leu Gly Phe Lys Asn Val Thr Glu Phe
 645 650 655
 Tyr Gln Lys Ile Ala Asp Glu Val Leu Asp Val Asn Asp Ile Leu Asp
 660 665 670
 Lys Tyr Ile Glu Gln Gln Lys Arg Asp Ser Glu Arg Asp Glu Val Thr
 675 680 685
 Tyr Arg Ser Ala Glu Glu Tyr Asn Leu Gln Asn Gln Ile Asp Glu Thr
 690 695 700
 Thr Val Thr Lys Glu Asp Val Leu Val Ile Asp Gln Asn Leu Lys Gly
 705 710 715 720
 Leu Asp Phe Lys Leu Ala Lys Cys Cys Asn Pro Ile Tyr Gly Asp Asp
 725 730 735
 Val Phe Gly Phe Val Thr Val Ser Gly Gly Ile Lys Ile His Arg Asn
 740 745 750
 Asp Cys Pro Asn Ala Gly Gln Met Arg Glu Arg Phe Gly Tyr Arg Ile
 755 760 765
 Val Lys Ala Arg Trp Ala Gly Lys Ser Glu Gly Thr Gln Tyr Pro Ile
 770 775 780
 Thr Leu Arg Val Val Gly His Asp Asp Ile Gly Ile Val Thr Asn Ile
 785 790 795 800
 Thr Ser Ile Ile Ser Lys Glu Asn Gly Ile Ser Leu Arg Ser Ile Gly
 805 810 815
 Ile Asp Ser Asn Asp Gly Leu Phe Ser Gly Thr Leu Thr Ile Met Val
 820 825 830
 Ser Asp Thr Gly Arg Leu Glu Ala Leu Ile Lys Lys Leu Arg Thr Val
 835 840 845
 Lys Gly Val Lys Gln Val Ser Arg Asn
 850 855

<210> 5545

<211> 492

<212> PRT

<213> B.fragilis

<400> 5545

Tyr Ser Leu Leu Met Ile Phe Thr Ala Glu Asn Ile Leu Leu Ile Gly
 1 5 10 15
 Ser Ile Leu Leu Phe Val Ser Ile Val Val Gly Lys Thr Gly Tyr Arg
 20 25 30
 Phe Gly Val Pro Ala Leu Leu Leu Phe Leu Leu Val Gly Met Leu Phe
 35 40 45
 Gly Ser Asp Gly Leu Gly Leu Gln Phe His Asn Ala Lys Ile Ala Gln
 50 55 60
 Phe Ile Gly Met Val Ala Leu Ser Val Ile Leu Phe Ser Gly Gly Met
 65 70 75 80
 Asp Thr Lys Phe Lys Glu Ile Arg Pro Ile Leu Ser Pro Gly Ile Val
 85 90 95
 Leu Ser Thr Val Gly Val Phe Leu Thr Ala Leu Phe Thr Gly Leu Phe
 100 105 110
 Ile Trp Tyr Leu Ser Gly Met Ser Trp Thr Asn Ile His Phe Pro Leu
 115 120 125
 Ile Thr Ser Leu Leu Leu Ala Ser Thr Met Ser Ser Thr Asp Ser Ala
 130 135 140
 Ser Val Phe Ala Ile Leu Arg Ser Gln Lys Met Asn Leu Lys His Asn
 145 150 155 160
 Leu Arg Pro Met Leu Glu Leu Glu Ser Gly Ser Asn Asp Pro Met Ala
 165 170 175
 Tyr Met Leu Thr Ile Val Leu Ile Gln Phe Ile Gln Ser Asp Gly Met
 180 185 190

Gly Thr Gly Asn Ile Ile Gly Ser Phe Ile Ile Gln Phe Leu Val Gly
 195 200 205
 Ala Ala Ala Gly Tyr Ile Leu Gly Lys Leu Ala Ile Leu Ile Leu Asn
 210 215 220
 Lys Ile Asn Ile Asp Asn Gln Ser Leu Tyr Pro Ile Leu Leu Leu Ser
 225 230 235 240
 Phe Val Phe Phe Thr Phe Ala Ile Thr Asp Leu Leu Arg Gly Asn Gly
 245 250 255
 Tyr Leu Ala Val Tyr Ile Ala Gly Met Met Val Gly Asn His Lys Ile
 260 265 270
 Thr Phe Arg Lys Glu Ile Ala Thr Phe Met Asp Gly Leu Thr Trp Leu
 275 280 285
 Phe Gln Ile Ile Met Phe Leu Met Leu Gly Leu Leu Val Asn Pro His
 290 295 300
 Glu Met Ile Glu Val Ala Val Val Ala Leu Leu Ile Gly Val Phe Met
 305 310 315 320
 Ile Val Ile Gly Arg Pro Leu Ser Val Phe Leu Cys Leu Leu Pro Phe
 325 330 335
 Arg Lys Ile Thr Leu Lys Ser Arg Leu Phe Val Ser Trp Val Gly Leu
 340 345 350
 Arg Gly Ala Val Pro Ile Ile Phe Ala Thr Tyr Pro Val Val Ala Asn
 355 360 365
 Val Glu Gly Ser Asn Met Ile Phe Asn Ile Val Phe Phe Ile Thr Ile
 370 375 380
 Val Ser Leu Ile Val Gln Gly Thr Ser Val Ser Phe Val Ala Arg Leu
 385 390 395 400
 Leu His Leu Ser Thr Pro Leu Glu Lys Thr Gly Asn Asp Phe Gly Val
 405 410 415
 Glu Leu Pro Glu Glu Ile Asp Thr Asp Leu Ser Asp Met Thr Ile Thr
 420 425 430
 Met Glu Met Leu Asn Glu Ala Asp Thr Leu Lys Asp Met Asn Leu Pro
 435 440 445
 Lys Gly Thr Leu Val Met Ile Val Lys Arg Gly Asp Glu Phe Leu Ile
 450 455 460
 Pro Asn Gly Thr Leu Lys Leu His Val Gly Asp Lys Leu Leu Leu Ile
 465 470 475 480
 Ser Glu Lys Asn Lys Gln Glu Thr Val Lys Asn Glu
 485 490

<210> 5546

<211> 103

<212> PRT

<213> B.fragilis

<400> 5546

Leu Leu Met Leu Phe Thr Gln Gln Val Val His Ser Leu Tyr Arg Ile
 1 5 10 15
 Glu Ser Gly Lys Trp Asn Leu His Lys Tyr Arg Thr Pro Ile Ala His
 20 25 30
 Ser Thr Ile Pro Gln Thr Gly Lys Phe Lys Ser Phe Gln Ile Leu Thr
 35 40 45
 Thr Leu Arg Leu Ile Arg Asp Glu Ala Gly Ser Phe Ile His Ile Phe
 50 55 60
 Arg Gln Ile Lys Phe Met Thr Leu Ile Ile Thr Tyr Gly Ala Asn Gln
 65 70 75 80
 Ile Asp Arg Val Glu Val Arg Thr Leu Phe Lys His Phe Leu Cys Phe
 85 90 95
 Arg Ile Ile His Ile Asp Leu
 100

<210> 5547
 <211> 415
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (158)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 5547
 His Ser Trp Arg Ser Ile Trp Ala Ile Leu Tyr Met Lys Ala Gly Phe
 1 5 10 15
 Ser Ser Phe Ser Ser Gly Ile Arg Asn Leu Gln Arg Asn Gln Lys Asn
 20 25 30
 Met Lys Gln Leu Arg Asn Ile Val Ala Gly Met Leu Val Leu Ile Gly
 35 40 45
 Gly Met Leu Pro Ala Thr Thr Phe Ala Gln Glu Pro Val Pro Gly Asp
 50 55 60
 Thr Thr Gly Thr Leu Gln His Glu Ile Ile Val Gly Lys Asp Thr Ile
 65 70 75 80
 Asn Gln Glu Ala Asn Gln Val Asp Val Lys Gly Ile Val Phe Gly Pro
 85 90 95
 Ile Gly Asp Ser Tyr Glu Trp His Ile Thr Asn Ile Gly Lys Thr Ser
 100 105 110
 Ile Cys Ile Pro Leu Arg Leu Ile Val Tyr Ser Glu Leu Ser Gly Trp
 115 120 125
 His Ala Phe Leu Ser Ser Arg Leu Glu Glu Asn Gly Gly Lys Tyr Glu
 130 135 140
 Gly Phe Tyr Ile Ala Pro Ala Gly Ser Lys Tyr Glu Gly Xaa Val Val
 145 150 155 160
 Glu Arg Asn Ala Thr Gly Glu Glu Val Arg Pro Trp Asp Ile Ser Ile
 165 170 175
 Thr Lys Val Thr Leu Ser Leu Phe Ile Asn Ser Ala Ile Leu Leu Ala
 180 185 190
 Ile Ile Leu Ser Val Ala His Trp Tyr Arg Lys Arg Glu Gln Gly Ala
 195 200 205
 Tyr Ala Pro Gly Gly Phe Ile Gly Phe Met Glu Met Phe Ile Met Met
 210 215 220
 Val His Asp Asp Val Ile Lys Ser Cys Val Gly Pro Asn Tyr Lys Lys
 225 230 235 240
 Phe Ala Pro Tyr Leu Leu Thr Ala Phe Phe Phe Ile Phe Ile Asn Asn
 245 250 255
 Ile Met Gly Leu Ile Pro Ile Phe Pro Gly Gly Ala Asn Val Thr Gly
 260 265 270
 Asn Ile Ala Ile Thr Leu Val Leu Ala Leu Phe Thr Phe Val Ile Val
 275 280 285
 Asn Ile Phe Gly Thr Lys His Tyr Trp Lys Asp Ile Phe Trp Pro Asp
 290 295 300
 Val Pro Trp Trp Leu Lys Val Pro Ile Pro Met Met Pro Phe Ile Glu
 305 310 315 320
 Phe Phe Gly Val Phe Thr Lys Pro Phe Ala Leu Met Ile Arg Leu Phe
 325 330 335
 Ala Asn Met Leu Ser Gly His Met Ala Met Leu Val Leu Thr Cys Leu
 340 345 350
 Ile Phe Ile Ser Ala Ser Met Gly Pro Ala Ile Asn Gly Ser Leu Thr
 355 360 365
 Val Ala Ser Val Leu Phe Asn Ile Phe Met Asn Leu Leu Glu Val Leu

370	375	380
Val Ala Phe Ile Gln Ala Tyr Val Phe Thr Met Leu Ser Ala Val Phe		
385	390	395
Ile Gly Leu Ala Gln Glu Gly Gly Lys Lys Glu Glu Val Lys Glu		400
405	410	415

<210> 5548
 <211> 885
 <212> PRT
 <213> B.fragilis

<400> 5548

Val	Leu	Ile	Arg	Phe	Asn	Met	Arg	Leu	Lys	Thr	Ile	Leu	Leu	Thr	Thr
1				5					10					15	
Met	Ala	Thr	Gly	Ser	Phe	Leu	Cys	Glu	Pro	Val	Ala	Ala	Met	Cys	Ile
		20						25					30		
Glu	Pro	Pro	Ala	Thr	Pro	Asp	Met	Gly	Trp	Phe	Leu	Lys	Lys	Lys	Lys
		35				40						45			
Lys	Ser	Asn	Pro	Gln	Asp	Ser	Ile	Lys	Val	Lys	Asn	Glu	Tyr	Glu	Lys
	50				55						60				
Leu	Thr	Gly	Ser	Asp	Ser	Val	Val	Arg	Arg	Gly	Met	Phe	Asn	Val	Tyr
65				70					75						80
Gln	Lys	Lys	Asn	Asp	Tyr	Tyr	Phe	Glu	Ile	Pro	Ser	Thr	Leu	Leu	Gly
			85					90					95		
Arg	Asp	Met	Leu	Val	Val	Asn	Lys	Leu	Gln	Arg	Val	Pro	Ala	Glu	Leu
		100						105					110		
Asn	Glu	Ala	Gly	Val	Asn	Arg	Gly	Thr	Asn	Tyr	Glu	Asn	Gln	Met	Ile
	115						120					125			
Arg	Phe	Glu	Leu	Asp	Lys	Ser	Ala	Asn	Lys	Leu	Leu	Ile	Arg	Gln	Ser
	130				135						140				
Arg	Pro	Leu	Pro	Ile	Ser	Pro	Ser	Glu	Asp	Ala	Ile	Ser	Gln	Ser	Val
145					150				155						160
Lys	Asp	Asn	Tyr	Ile	Ser	Pro	Leu	Ile	Ala	Gly	Phe	Lys	Val	Glu	Ala
			165					170						175	
Tyr	Asn	Asn	Asp	Ser	Thr	Ser	Ile	Leu	Ile	Lys	Val	Asn	Asp	Ile	Tyr
		180					185						190		
Asp	Gly	Thr	Glu	Thr	Ser	Ile	Asn	Asn	Val	Phe	Thr	Asn	Ile	Asn	Leu
	195						200					205			
Gly	Thr	Ser	Ala	Ile	Lys	Asn	Leu	Ser	Arg	Ile	Leu	Ser	Ile	Lys	Ser
	210				215						220				
Phe	Asp	Asn	Asn	Val	Val	Ala	Thr	Ser	Glu	Leu	Thr	Thr	Arg	Val	Thr
225				230						235					240
Glu	Gly	Thr	Thr	Thr	Ile	Tyr	Val	Thr	Val	Glu	Val	Ser	Ser	Ser	Ile
			245						250					255	
Leu	Leu	Leu	Pro	Glu	Val	Pro	Met	Thr	Gly	Arg	Leu	Asp	Asn	Pro	Arg
		260					265						270		
Val	Gly	Tyr	Phe	Thr	Asn	Pro	Leu	Thr	Asn	Phe	Ser	Asp	Gly	Gln	Gln
	275					280						285			
Arg	Val	Asn	Lys	Lys	Gln	Phe	Ile	Thr	Arg	Trp	Arg	Leu	Glu	Pro	Arg
	290				295						300				
Pro	Glu	Asp	Arg	Ala	Ala	Tyr	Leu	Arg	Gly	Glu	Leu	Val	Glu	Pro	Arg
305				310						315					320
Lys	Pro	Ile	Val	Phe	Tyr	Ile	Glu	Asn	Ser	Thr	Pro	Tyr	Arg	Trp	Arg
			325						330					335	
Lys	Tyr	Ile	Lys	Gln	Gly	Ile	Glu	Asp	Trp	Gln	Val	Ala	Phe	Glu	Arg
		340					345						350		
Ala	Gly	Phe	Lys	Asn	Ala	Ile	Ile	Ala	Lys	Asp	Ile	Thr	Glu	Asp	Met
	355					360						365			
Glu	Val	Asp	Met	Asp	Asp	Val	Asn	Tyr	Ser	Val	Leu	Thr	Tyr	Ala	Ala

370	375	380
Ser Thr Lys Ala Asn	Ala Met Gly Pro Ser	Ile Leu Asp Pro Arg Ser
385	390	395
Gly Glu Ile Leu Glu	Ala Asp Ile Met Trp	Trp His Asn Val Leu Ser
405	410	415
Met Leu Gln Glu Trp	Ile Thr Val Gln Thr	Gly Val Val Arg Pro Glu
420	425	430
Ala Arg Gly Val Ala	Leu Pro Asp Ser Leu	Met Gly Asp Ala Met Arg
435	440	445
Phe Val Ala Cys His	Glu Val Gly His Ser	Leu Gly Leu Arg His Asn
450	455	460
Met Met Gly Ser Trp	Ala Phe Pro Thr Asp	Ser Leu Arg Ser Lys Thr
465	470	475
Phe Thr Asp Arg Met	Asn Ser Thr Ser Ser	Ser Ile Met Asp Tyr Ala
485	490	495
Arg Phe Asn Tyr Val	Ala Gln Pro Gly Asp	Gly Ile Lys Ala Leu Ser
500	505	510
Pro His Ile Gly Pro	Tyr Asp Met Phe Ala	Ile Glu Tyr Gly Tyr Arg
515	520	525
Trp Tyr Gly Lys Gln	Thr Pro Glu Glu Glu	Lys Glu Leu Leu Gln Asp
530	535	540
Phe Leu Ala Lys His	Thr Asp Arg Leu Tyr	Lys Tyr Ser Glu Ala Gln
545	550	555
Asp Pro Arg Asp Ala	Val Asp Pro Arg Ala	Gln Asn Glu Asp Leu Gly
565	570	575
Asp Asp Pro Ile Arg	Ser Ser Gln Tyr Gly	Ile Ala Asn Leu Lys Cys
580	585	590
Ile Val Pro Gln Ile	Ile Gln Trp Thr Thr	Thr Thr Gly Glu Lys Gly Gln
595	600	605
Thr Tyr Glu Glu Ala	Ser Arg Leu Tyr Tyr	Ala Val Ile Asn Gln Trp
610	615	620
Asn Asn Tyr Leu Tyr	His Val Met Ala Asn	Ile Gly Gly Ile Tyr Ile
625	630	635
Glu Asn Thr Thr Val	Gly Asp Gly Glu Lys	Thr Tyr Thr Phe Val Glu
645	650	655
Lys Glu Lys Gln Gln	Ala Ala Leu Arg Phe	Leu Leu Asp Glu Val Leu
660	665	670
Cys Tyr Pro Lys Trp	Leu Phe Asp Pro Glu	Ile Ala Gln Tyr Thr Tyr
675	680	685
Leu Leu Lys Asn Thr	Pro Leu Gly Val Val	Glu Asn Ala Pro Thr Gln
690	695	700
Val Leu Lys Asn Ala	Gln Ala Tyr Val Phe	Trp Asp Leu Leu Ser Asn
705	710	715
Asn Arg Leu Met Arg	Met Leu Glu Asn Glu	Ser Val Asn Gly Lys Lys
725	730	735
Ala Phe Thr Ala Val	Glu Leu Met Asp Gly	Leu His Lys Ser Ile Phe
740	745	750
Ala Val Thr Glu Arg	Gly Gly Leu Pro Asp	Val Met Thr Arg Asn Leu
755	760	765
Gln Lys Gly Phe Val	Asp Ala Leu Ile Thr	Ala Ala Glu Ser Glu
770	775	780
Gly Val Lys Val Asn	Lys Lys Leu Ile Asp	Asn His Phe Leu Phe Asp
785	790	795
Phe Gln Thr Pro Ile	Cys Ser Cys Asp Asp	His Ala His Arg Ser Ala
805	810	815
His Thr Asp Arg Met	Gly Ala Arg Arg Glu	Leu Asn Phe Tyr Gly Ser
820	825	830
Gln Ile Asn Arg Ile	Ser Asp Ala Ile Ser	Val Lys Arg Gly Glu Leu
835	840	845

Leu Arg Ile Lys Asp Leu Leu Gln Ser Arg Leu Gly Thr Ser Asp Val
 850 855 860
 Ala Thr Lys Tyr His Tyr Lys Asp Leu Ile Leu Arg Ile Asn Thr Ala
 865 870 875 880
 Leu Gly Ile Ser Lys
 885

<210> 5549
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 5549
 Asn Thr Asn Arg Ala Asp Met Arg Gln Leu Tyr Tyr Thr Phe Arg Thr
 1 5 10 15
 Leu Leu Arg Gly Arg Gly Gly Asn Leu Thr Lys Ile Ile Ser Leu Thr
 20 25 30
 Leu Gly Leu Leu Val Gly Ile Leu Leu Phe Ala Arg Val Ala Phe Glu
 35 40 45
 Leu Asn Tyr Asp Ser Tyr Tyr Gln Glu Pro Glu Asn Leu Phe Leu Thr
 50 55 60
 Leu Arg Thr Val Val Ser Gln Gly Glu Lys Lys Glu Pro Val Cys Ser
 65 70 75 80
 Asn Tyr Gly Lys Leu Pro Ala Ala Ile Arg Glu Asn Phe Pro Asp Glu
 85 90 95
 Val Glu Asp Ala Thr Leu Ile Asp Leu Phe Ser Arg Ser Ser Leu Tyr
 100 105 110
 His Glu Gly Gln Glu Lys Lys Asp Ala Ile Leu Ala Thr Ser Arg Ser
 115 120 125
 His Ile Phe Ser Thr Leu Gly Val Lys Val Leu Ser Gly Asn Val Ser
 130 135 140
 Glu Leu Asp Asn Met Asp Ala Leu Phe Ile Ser Arg Ser Leu Ala Gln
 145 150 155 160
 Ser Leu Phe Ala Asp Ala Asp Pro Ile Gly Lys Thr Val Met Ile Asn
 165 170 175
 Ile Asp Tyr Pro Leu Thr Val Arg Gly Val Phe Glu Asp Ile Pro Glu
 180 185 190
 Asn Ala Glu Phe Arg Phe Asp Gly Val Tyr Ser Phe Val Thr Arg Ala
 195 200 205
 Asn Arg Phe Arg Asp Glu Arg Gly Gly Trp Arg Gly Asp Ile Ser Tyr
 210 215 220
 Thr Cys Met Val Arg Phe Arg His Pro Glu Asp Val Glu Lys Val Ala
 225 230 235 240
 Ala Arg Met Pro Asp Met Leu Lys Lys Tyr Ile Gln Tyr Asn Lys Asp
 245 250 255
 Trp Phe Glu Glu Phe Ser Phe Ile Thr Pro Ser Gln Phe His Leu Gln
 260 265 270
 Lys Lys Glu Ser Arg Lys Ile Ile Ser Ile Leu Ser Ile Leu Gly Phe
 275 280 285
 Ala Ile Leu Leu Ile Ala Gly Met Asn Asn Val Leu Asp Phe Tyr Phe
 290 295 300
 Ile Ile Gly Ser Thr Ser
 305 310

<210> 5550
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 5550

Gln Lys Leu Arg Met Glu Lys Phe Ser Thr Arg Lys Arg Ile Arg Ser
 1 5 10 15
 Phe Gly Tyr Ala Trp Lys Gly Ile Arg Ser Phe Val Ser Lys Glu His
 20 25 30
 Asn Ala Trp Ile His Cys Thr Ala Ile Ile Ile Val Thr Val Ala Gly
 35 40 45
 Phe Cys Phe Gly Ile Thr Arg Asn Glu Trp Met Ala Ile Ile Leu Cys
 50 55 60
 Phe Gly Val Val Leu Ala Ala Glu Gly Phe Asn Thr Ala Ile Glu Arg
 65 70 75 80
 Leu Val Asn Leu Val Ser Pro Glu Arg Asn Pro Ile Ala Gly Asp Val
 85 90 95
 Lys Asp Ile Ala Ala Gly Ser Val Leu Ile Cys Ala Ile Val Ala Ala
 100 105 110
 Ile Val Gly Ile Ile Ile Phe Met Pro Tyr Val Leu Ala Val Leu Leu
 115 120 125
 Cys Asn Met Gly
 130

<210> 5551

<211> 511

<212> PRT

<213> B.fragilis

<400> 5551

Tyr Ile Lys Arg Leu Leu Met Ser Gln Ile Ile Gly His Ile Ser Gln
 1 5 10 15
 Val Ile Gly Pro Val Val Asp Val Tyr Phe Glu Gly Thr Glu Ser Asp
 20 25 30
 Leu Ile Leu Pro Ser Ile His Asp Ala Leu Glu Ile Lys Arg His Asn
 35 40 45
 Gly Lys Lys Leu Ile Val Glu Val Gln Gln His Ile Gly Glu Asn Thr
 50 55 60
 Val Arg Thr Val Ala Met Asp Ser Thr Asp Gly Leu Gln Arg Gly Met
 65 70 75 80
 Lys Val Phe Pro Thr Gly Gly Pro Ile Thr Met Pro Val Gly Glu Gln
 85 90 95
 Ile Lys Gly Arg Leu Met Asn Val Val Gly Asp Ser Ile Asp Gly Met
 100 105 110
 Lys Glu Leu Asn Arg Asp Gly Ala Tyr Ser Ile His Arg Asp Pro Pro
 115 120 125
 Lys Phe Glu Asp Leu Thr Thr Val Gln Glu Val Leu Phe Thr Gly Ile
 130 135 140
 Lys Val Ile Asp Leu Leu Glu Pro Tyr Ser Lys Gly Gly Lys Ile Gly
 145 150 155 160
 Leu Phe Gly Gly Ala Gly Val Gly Lys Thr Val Leu Ile Met Glu Leu
 165 170 175
 Ile Asn Asn Ile Ala Lys Lys His Asn Gly Phe Ser Val Phe Ala Gly
 180 185 190
 Val Gly Glu Arg Thr Arg Glu Gly Asn Asp Leu Leu Arg Glu Met Ile
 195 200 205
 Glu Ser Gly Val Ile Arg Tyr Gly Glu Ala Phe Lys Glu Ser Met Glu
 210 215 220
 Lys Gly His Trp Asp Leu Ser Lys Val Asp Tyr Asn Glu Val Glu Lys
 225 230 235 240
 Ser Gln Ala Thr Leu Val Phe Gly Gln Met Asn Glu Pro Pro Gly Ala
 245 250 255
 Arg Ala Ser Val Ala Leu Ser Gly Leu Thr Val Ala Glu Ser Phe Arg

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	260		265		270
Asp Met Gly	Ala Lys Ser Gly	Ala Arg Asp Ile Leu Phe	Phe Ile Asp		
	275	280	285		
Asn Ile Phe	Arg Phe Thr Gln	Ala Gly Ser Glu Val Ser	Ala Leu Leu		
	290	295	300		
Gly Arg Met	Pro Ser Ala Val	Gly Tyr Gln Pro Thr	Leu Ala Thr Glu		
305	310	315	320		
Met Gly Ala	Met Gln Glu Arg	Ile Thr Ser Thr	Lys Thr Gly Ser Ile		
	325	330	335		
Thr Ser Val	Gln Ala Val Tyr	Val Pro Ala Asp	Asp Leu Thr Asp Pro		
	340	345	350		
Ala Pro Ala	Thr Thr Phe Thr	His Leu Asp Ala	Thr Thr Val Leu Ser		
	355	360	365		
Arg Lys Ile	Thr Glu Leu Gly	Ile Tyr Pro Ala	Val Asp Pro Leu Glu		
	370	375	380		
Ser Thr Ser	Arg Ile Leu Asp	Pro His Ile Val	Gly Gln Glu His Tyr		
385	390	395	400		
Asp Val Ala	Gln Arg Val Lys	Gln Ile Leu Gln	Arg Asn Lys Glu Leu		
	405	410	415		
Gln Asp Ile	Ile Ser Ile Leu	Gly Met Glu Glu	Leu Ser Asp Ala Asp		
	420	425	430		
Arg Leu Val	Val Asn Arg Ala	Arg Arg Val Gln	Arg Phe Leu Ser Gln		
	435	440	445		
Pro Phe Thr	Val Ala Glu Gln	Phe Thr Gly Val	Pro Gly Ala Met Val		
	450	455	460		
Ala Ile Glu	Asp Thr Ile Lys	Gly Phe Lys Met	Ile Leu Asp Gly Glu		
465	470	475	480		
Val Asp Tyr	Leu Pro Glu Pro	Ala Phe Leu Asn	Val Gly Thr Ile Glu		
	485	490	495		
Glu Ala Ile	Glu Lys Gly Lys	Lys Leu Leu Glu	Gln Ala Asn Lys		
	500	505	510		

<210> 5552

<211> 602

<212> PRT

<213> B.fragilis

<400> 5552

Gln Met Lys	Arg His Val Phe	Ile Leu Leu Leu	Ser Phe Ala Gly	Val
1	5	10	15	
Leu Thr Ser	Ala Phe Ala Ala	Ser Arg Gln Val	Gln Gly Val Val	Ile
	20	25	30	
Ser Ser Glu	Asp Asn Met Pro	Leu Ile Gly Ala	Ser Val Tyr Ile	Lys
	35	40	45	
Ala Glu Asp	Leu Ser Lys Asp	Gly Asn Ser Pro	Thr Ile Thr Gly	Val
	50	55	60	
Ile Thr Asp	Ile Asp Gly Lys	Phe Asn Ile Ser	Val Pro Glu Gly	Val
65	70	75	80	
Thr Arg Leu	Phe Cys Ser Tyr	Val Gly His Glu	Val Gln Glu Leu	Lys
	85	90	95	
Leu Val Pro	Gly Lys Asp Gln	Tyr Glu Ile Thr	Leu Phe Pro Ser	Ala
	100	105	110	
Gln Met Leu	Asp Ala Val Val	Val Thr Gly Tyr	Gln Thr Val Glu	Arg
	115	120	125	
Arg Lys Leu	Thr Ala Ala Val	Gly Lys Leu Asn	Ile Ser Asp Glu	Thr
	130	135	140	
Ile Gly Ala	Val Lys Ser Ile	Asp Gln Ala Leu	Ala Gly Gln Ile	Ala
145	150	155	160	
Gly Leu Ser	Val Thr Ser Thr	Ser Gly Ala Pro	Gly Ala Pro Ala	Lys

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      165      170      175
Ile Arg Ile Arg Gly Thr Ser Ser Leu Asn Gly Thr Gln Asp Pro Leu
      180      185      190
Trp Val Leu Asp Gly Ile Pro Leu Glu Gly Thr Asp Val Pro Gln Ser
      195      200      205
Asn Val Leu Asn Asp Val Ser Asn Ile Gln Gln Ser Ser Ile Ala Gly
      210      215      220
Leu Asn Pro Ala Asp Ile Glu Asn Ile Thr Val Leu Lys Asp Ala Ala
      225      230      235      240
Ala Thr Ala Ile Tyr Gly Ala Arg Ala Ala Asn Gly Val Ile Val Ile
      245      250      255
Thr Thr Lys Lys Gly Lys Val Gly Lys Pro Val Ile Asn Phe Ser Ser
      260      265      270
Lys Phe Thr Tyr Met Pro Thr Leu Ser Thr Asn Arg Leu Asn Met Leu
      275      280      285
Asn Ser Gln Glu Lys Val Asp Leu Glu Leu Glu Leu Leu Arg Ser Asn
      290      295      300
Phe Ala Tyr Gly Asp Asn Lys Gly Gly Val Ser Lys Ile Ile Ser Gly
      305      310      315      320
Tyr Gly Leu Thr Asp Ala Tyr Lys Lys Gly Gly Trp Ser Ala Leu Thr
      325      330      335
Pro Glu Ala Gln Thr Asp Ile Ser Arg Leu Arg Asn Thr Glu Thr Asp
      340      345      350
Trp Gly Asp Ile Leu Phe Arg Asp Ala Phe Asn Gln Glu Tyr Ser Leu
      355      360      365
Ser Leu Ser Gly Gly Asn Glu Arg Val Thr Tyr Tyr Thr Ser Ile Gly
      370      375      380
Tyr Tyr Gln Glu Asn Gly Asn Val Lys Gly Val Gly Leu Asp Arg Leu
      385      390      395      400
Asn Ile Val Ala Lys Thr Ser Tyr Lys Val Asn Arg Met Leu Lys Phe
      405      410      415
Gly Val Ser Leu Phe Val Asn Arg Arg Asn Asn Lys Thr Tyr Leu Thr
      420      425      430
Asp Thr Tyr Gly Leu Val Asn Pro Val Tyr Tyr Ser Arg Lys Ala Asn
      435      440      445
Pro Tyr Tyr Gln Pro Phe Asp Val Asn Gly Asn Tyr Val Tyr Asp Phe
      450      455      460
Asp Val Gln Asn Asn Ser Asp Thr Asp Leu Gly Phe Asn Ile Phe Glu
      465      470      475      480
Glu Arg Lys Asn Thr Ser Asn Glu Glu Thr Ile Asn Ala Leu Ser Ser
      485      490      495
Ile Phe Asp Ala Glu Leu Arg Phe Asn Asp Lys Leu Lys Phe Thr Thr
      500      505      510
Gln Leu Gly Leu Gln Leu Asp Lys Ala Ser Lys Glu Gln Ile Ala Asp
      515      520      525
Lys Glu Ser Phe Ser Met Arg Ile Ile Arg Lys Asn Ser Lys Tyr Trp
      530      535      540
Asp Ser Ala Ser Gln Ser Asn Lys Tyr Phe Ile Pro Asp Gly Gly Val
      545      550      555      560
His Lys Ala Tyr Glu Asn Thr Asn Ser Gln Ile Thr Trp Lys Ala Met
      565      570      575
Gly Glu Tyr Arg Asp Ser Phe Asn Asp Ile His Glu Leu Glu Val Met
      580      585      590
Val Gly Thr Glu Leu Arg Lys His Leu Val
      595      600

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<210> 5553

<211> 530

<212> PRT

<213> B.fragilis

<400> 5553

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Phe Phe Ser Gly Phe Cys Arg Val Ser Ser Ser Phe Phe Cys Ile Phe
1      5      10      15
Gly His Glu Leu Ile Lys Leu Asp Ser Met Ile Thr Pro Glu Asp Lys
20      25      30
Glu Leu Leu Ala Lys Lys Gly Ile Ser Glu Val Gln Ile Ala Glu Gln
35      40      45
Leu Ala Cys Phe Gln Lys Gly Phe Pro Tyr Leu Lys Leu Asp Ala Ala
50      55      60
Ala Ser Val Glu Lys Gly Ile Leu Ala Pro Asp Ala Glu Glu Gln Lys
65      70      75      80
Ala Tyr Leu Ala Ala Trp Asn Ala Tyr Thr Asn Ser Asp Lys Thr Ile
85      90      95
Val Lys Phe Val Pro Ala Ser Gly Ala Ala Ser Arg Met Phe Lys Asn
100     105     110
Leu Phe Glu Phe Leu Asp Ala Asp Tyr Thr Glu Pro Thr Thr Lys Phe
115     120     125
Glu Gln Thr Phe Phe Glu Ser Ile Glu Lys Phe Ala Phe Tyr Asp Asp
130     135     140
Leu Asn Thr Ala Cys Val Arg Thr Glu Gly Lys Gly Ile Pro Thr Leu
145     150     155     160
Ile Ala Glu Gly Asn Tyr Lys Ala Val Val Ser Gly Leu Leu Asn Val
165     170     175
Ala Gly Leu Asn Tyr Gly Ala Leu Pro Lys Gly Leu Leu Lys Phe His
180     185     190
Lys Tyr Glu Glu Gly Ser Arg Thr Pro Leu Glu Glu His Leu Ala Glu
195     200     205
Gly Ala Met Tyr Ala Ala Gly Lys Ser Gly Lys Val Asn Val His Phe
210     215     220
Thr Val Ser Thr Glu His Arg Glu Leu Phe Lys Ser Leu Val Thr Glu
225     230     235     240
Lys Val Asp Ala Phe Ala Lys Arg Tyr Gly Val Asp Tyr Asn Ile Thr
245     250     255
Phe Ser Glu Gln Lys Pro Ser Thr Asp Thr Ile Ala Ala Asp Met Glu
260     265     270
Asn Gln Pro Phe Arg Asp Asn Gly Lys Leu Leu Phe Arg Pro Gly Gly
275     280     285
His Gly Ala Leu Ile Glu Asn Leu Asn Asp Leu Asp Ala Asp Val Ile
290     295     300
Phe Ile Lys Asn Ile Asp Asn Val Val Pro Asp Lys Leu Lys Gly Asp
305     310     315     320
Thr Val Leu Tyr Lys Lys Leu Ile Ala Gly Val Leu Val Ser Leu Gln
325     330     335
Lys Gln Ala Phe Gln Tyr Leu Glu Leu Leu Asp Ser Gly Arg Tyr Thr
340     345     350
His Glu Gln Val Met Asp Ile Leu Gln Phe Val Gln Lys Lys Leu Phe
355     360     365
Cys Lys Asn Pro Glu Thr Lys Asp Leu Glu Asp Ala Glu Leu Val Ile
370     375     380
Tyr Leu Lys Asn Lys Leu Asn Arg Pro Met Arg Val Cys Gly Met Val
385     390     395     400
Lys Asn Val Gly Glu Pro Gly Gly Gly Pro Phe Leu Ala Tyr Asn Ser
405     410     415
Asp Gly Thr Ile Ser Leu Gln Ile Leu Glu Ser Ser Gln Ile Asp Met
420     425     430
Asn Asn Pro Glu Ala Lys Glu Met Phe Glu Lys Gly Thr His Phe Asn
435     440     445

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Pro Val Asp Leu Val Cys Ala Val Arg Asp Tyr Lys Gly His Lys Phe
 450 455 460
 Asp Leu Ala Lys Tyr Val Asp Lys Ala Thr Gly Phe Ile Ser Tyr Lys
 465 470 475 480
 Ser Lys Ser Gly Lys Asp Leu Lys Ala Leu Glu Leu Pro Gly Leu Trp
 485 490 495
 Asn Gly Ala Met Ser Asp Trp Ser Thr Val Phe Val Glu Val Pro Leu
 500 505 510
 Ser Thr Phe Asn Pro Val Lys Thr Val Asn Asp Leu Leu Arg Glu Gln
 515 520 525
 His Gln
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<210> 5554

<211> 864

<212> PRT

<213> B.fragilis

<400> 5554

Leu Ile Ile Ile Leu Leu Ser Ser Phe Phe Cys Phe Asn Phe Val Ala
 1 5 10 15
 Lys Tyr Tyr Cys Met Glu Glu Asn His Glu Ile Glu Leu Ala Trp Gln
 20 25 30
 Val Ile Glu Asn Thr Gly Thr His Leu Phe Leu Thr Gly Lys Ala Gly
 35 40 45
 Thr Gly Lys Thr Thr Phe Leu Arg Arg Leu Lys Glu Leu Thr Pro Lys
 50 55 60
 Arg Met Val Val Val Ala Pro Thr Gly Ile Ala Ala Ile Asn Ala Gly
 65 70 75 80
 Gly Val Thr Ile His Ser Phe Phe Gln Leu Asn Phe Ala Pro Tyr Ile
 85 90 95
 Pro Glu Ser Thr Phe Asn Ser Ala Gln Gln Gly Phe His Lys Phe Gly
 100 105 110
 Lys Glu Lys Ile Asn Ile Ile Arg Ser Met Asp Leu Leu Val Ile Asp
 115 120 125
 Glu Ile Ser Met Val Arg Ala Asp Gln Leu Asp Ala Ile Asp Ala Val
 130 135 140
 Leu Arg Arg Tyr Arg Asp Arg Ser Lys Pro Phe Gly Gly Val Gln Leu
 145 150 155 160
 Leu Met Ile Gly Asp Leu Gln Gln Leu Ala Pro Val Val Lys Glu Glu
 165 170 175
 Asp Trp Ser Leu Leu Ser Ser Tyr Tyr Asp Thr Ala Phe Phe Phe Gly
 180 185 190
 Ser His Ser Leu Lys Glu Thr Glu Tyr Ile Thr Ile Glu Leu Lys Lys
 195 200 205
 Val Tyr Arg Gln Ser Asp Thr Glu Phe Val Gly Leu Leu Asn Lys Ile
 210 215 220
 Arg Glu Lys Glu Ala Asp Asp Ala Val Leu Glu Glu Leu Asn Lys Arg
 225 230 235 240
 Tyr Leu Pro Gly Phe Arg Pro Arg Glu Glu Gly Tyr Ile Arg Leu
 245 250 255
 Thr Thr His Asn Tyr Gln Ala Gln Gln Tyr Asn Asp Arg Gln Leu Leu
 260 265 270
 Ser Leu Ser Gly Arg Ala Phe Ser Phe Gln Ala Lys Val Glu Gly Thr
 275 280 285
 Phe Pro Glu Ser Ala Tyr Pro Ala Asp Glu Met Leu Thr Val Lys Glu
 290 295 300
 Gly Ala Gln Ile Met Phe Ile Lys Asn Asp Ser Ser Gly Glu His Arg
 305 310 315 320

Tyr Tyr Asn Gly Met Ile Gly Leu Val Thr Ala Val Ser Lys Asp Gly
 325 330 335
 Ile Arg Val Lys Gly Asn Gly Glu Ser Gln Asp Phe Leu Leu Glu Thr
 340 345 350
 Glu Glu Trp Thr Asn Ser Lys Tyr Ser Leu Asn Pro Gln Thr Lys Glu
 355 360 365
 Ile Thr Glu Glu Val Glu Gly Thr Phe Arg Gln Tyr Pro Ile Arg Leu
 370 375 380
 Ala Trp Ala Ile Thr Ile His Lys Ser Gln Gly Leu Thr Phe Glu Arg
 385 390 395 400
 Ala Ile Ile Asp Ala Asn Ala Ser Phe Ala His Gly Gln Val Tyr Val
 405 410 415
 Ala Leu Ser Arg Cys Lys Ser Leu Gln Gly Leu Val Leu Ser Ser Pro
 420 425 430
 Leu Arg Arg Glu Ser Ile Ile Ser Asp Asp Thr Ile Asp Glu Phe Thr
 435 440 445
 Arg Asn Ala Gly Glu Met Thr Pro Asp Lys His Lys Leu Ala Leu Leu
 450 455 460
 Arg Gln His Tyr Phe Tyr Glu Leu Leu Cys Glu Gln Phe Asp Phe His
 465 470 475 480
 Pro Ile Glu Gln His Phe Leu Arg Leu Leu Arg Leu Leu Asp Glu His
 485 490 495
 Leu Tyr Arg Leu Tyr Pro Lys Leu Leu Glu Arg Tyr Lys Thr Thr Ala
 500 505 510
 Asp Leu Tyr Lys Thr Gln Ile Met Lys Val Ala Asp Thr Phe Lys Leu
 515 520 525
 Gln Tyr Ser Ala Leu Leu Met Glu Ala Glu Asp Tyr Thr Ala Asn Pro
 530 535 540
 Lys Leu Asn Glu Arg Val Met Ala Gly Ala His Tyr Phe Arg Gln His
 545 550 555 560
 Leu Glu Asp Leu Leu Thr Pro Leu Ile Thr Ser Thr Lys Val Glu Thr
 565 570 575
 Asp Asn Lys Glu Leu Lys Lys Lys Phe Ser Glu Ala Ala Asp Ala Met
 580 585 590
 Lys Thr Ala Leu His Val Lys Leu Gly Thr Leu Cys Tyr Thr Glu Lys
 595 600 605
 Glu Gly Phe Ser Val Ser Ala Phe Leu Lys Gln Lys Ala Val Leu Thr
 610 615 620
 Leu Ser Val Ser Gly Gly Glu Ala Ala Ser Ser Ser Gly Arg Ser Glu
 625 630 635 640
 Arg Lys Ser Arg Thr Ala Glu Lys Ile Glu Val Pro Thr Asp Ile Leu
 645 650 655
 His Pro Glu Leu Tyr Lys Gln Leu Ile Ala Trp Arg Asn Ser Glu Ala
 660 665 670
 Ala Lys Ala Gly Leu Pro Val Tyr Thr Ile Ile Gln Gln Lys Ala Ile
 675 680 685
 Leu Gly Ile Val Asn Leu Leu Pro Asn Asp Ala Ala Ser Leu Ile Arg
 690 695 700
 Ile Pro Tyr Phe Gly Lys Arg Gly Ala Glu Lys Tyr Gly Asp Ala Leu
 705 710 715 720
 Leu Glu Met Val Asn Arg Tyr Val Glu Glu His Gly Ile Glu Arg Pro
 725 730 735
 Gln Met Pro Thr Ala Thr Leu Thr Val Asn Asn Gly Ile Lys Thr Ser
 740 745 750
 Lys Glu Pro Lys Pro Leu Lys Glu Ala Lys Ser Val Lys Glu Pro Lys
 755 760 765
 Pro Asp Thr Lys Glu Val Thr Tyr Arg Leu Phe Arg Gln Gly Lys Ser
 770 775 780
 Ile Glu Glu Ile Ala Arg Glu Arg Glu Leu Val Ser Gly Thr Ile Ala

785		790		795		800
Gly His Leu Glu His Tyr Val Arg Ser Gly Glu Val Lys Ile Glu Gln						
	805			810		815
Leu Val Ala Arg Glu Lys Ile Thr Lys Ile Ile Arg Tyr Val Gln Ala						
	820		825		830	
His Gly Ser Asp Lys Gly Leu Thr Val Ile Lys Ala Ala Leu Gly Asp						
	835		840		845	
Asp Val Ser Tyr Ala Asp Ile Arg Leu Val Leu Ala Ala Gly Ile Lys						
	850		855		860	

<210> 5555

<211> 528

<212> PRT

<213> B.fragilis

<400> 5555

Ile Asn Pro Met Lys Asn Tyr Leu Gly Leu Ile Phe Leu Leu Phe Ala						
1	5			10		15
Phe Thr Ala Thr Ala Gln Asn Asn Arg Ser Ala Leu Leu Pro Met Pro						
	20		25		30	
Asn His Ile Glu Gln Val Gln Gly Lys Pro Phe Ser Leu Thr Gly Lys						
	35		40		45	
Asn Ile Thr Ile His Pro Gly Gln Pro Glu Leu Lys Phe Ala Ala Thr						
	50		55		60	
Thr Leu Gln Ser Ile Leu Lys Asp Arg Met Gln Val Asp Ile Pro Leu						
	65		70		75	
Ser Gly Ser Arg Gln Ser Pro Ile Arg Leu Ile Ile Asp Pro Gln Leu						
		85		90		95
Glu Gly Lys Glu His Tyr Gln Leu Lys Val Asp Gln Lys Gly Met Thr						
	100		105		110	
Ile Ser Gly Ala Ser Ala Ala Ala Val Phe Tyr Gly Val Met Thr Val						
	115		120		125	
Asp Gln Val Leu Leu Gly Asp Val Cys Ser Ser Asn Arg Lys Glu Met						
	130		135		140	
Thr Pro Ile Ser Ile Asp Asp Ala Pro Arg Phe Gly Tyr Arg Ala Leu						
	145		150		155	
Met Leu Asp Pro Ala Arg His Phe Leu Pro Ile Glu Asp Val Lys Phe						
		165		170		175
Tyr Ile Asp Gln Met Val Arg Tyr Lys Tyr Asn Val Leu Gln Leu His						
	180		185		190	
Leu Thr Asp Asp Gln Gly Trp Arg Ile Glu Ile Arg Lys His Pro Lys						
	195		200		205	
Leu Thr Ala Gly Gln Ser Phe Tyr Thr Gln Glu Glu Leu Ala Asp Leu						
	210		215		220	
Ile Arg Tyr Ala Ala Glu Arg His Val Glu Ile Val Pro Glu Leu Asp						
	225		230		235	
Ile Pro Gly His Thr Val Ala Val Leu Ala Ala Tyr Pro Glu Leu Gly						
		245		250		255
Cys Thr His Thr Asp Thr Ile Ala Lys Asn Val Gly Glu Thr Val Asn						
	260		265		270	
Leu Met Leu Cys Ala Asn Asn Glu Lys Val Tyr Glu Val Tyr Asn Asp						
	275		280		285	
Ile Ile Asp Glu Val Ser Ala Leu Phe Pro Ser Arg Tyr Ile His Leu						
	290		295		300	
Gly Gly Asp Glu Ala Val Ile Glu Lys Asn Trp Thr Lys Cys Glu Arg						
	305		310		315	
Cys Gln Lys Met Met Lys Glu Leu Lys Tyr Glu Lys Ala Ser Gln Leu						
		325		330		335
Met Ile Pro Phe Phe Ser Arg Met Leu Ser Phe Val Glu Ala Asp Gly						

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          340          345          350
Lys Tyr Pro Ile Leu Trp Cys Glu Leu Asp Asn Ile Arg Met Pro Ala
355          360          365
Asn Asp Tyr Leu Phe Pro Tyr Pro Lys Asn Val Thr Leu Val Ser Trp
370          375          380
Arg Tyr Gly Leu Thr Pro Thr Cys Gln Lys Leu Thr Gln Gln His Gly
385          390          395          400
Asn Pro Leu Ile Met Ala Pro Gly Glu Phe Ala Tyr Leu Asp Tyr Pro
405          410          415
Gln Phe Lys Gly Asp Leu Pro Glu Phe Asn Asn Trp Gly Met Pro Val
420          425          430
Thr Thr Leu Glu Thr Cys Tyr Gln Phe Asp Pro Gly Tyr Gly Lys Pro
435          440          445
Ala Ala Glu Gln Ala His Ile Leu Gly Val Met Gly Thr Leu Trp Gly
450          455          460
Glu Ala Ile Lys Asp Ile Asn Arg Val Thr Tyr Met Thr Tyr Pro Arg
465          470          475          480
Gly Leu Ala Leu Ala Glu Ala Gly Trp Thr Gln Met Glu His Arg Asn
485          490          495
Trp Asp Ser Phe Lys Glu Arg Leu Tyr Pro Asn Leu Asn Asn Leu Met
500          505          510
Lys Lys Gly Val Ser Ile Arg Val Pro Phe Glu Ile Val Lys Arg Lys
515          520          525

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<210> 5556

<211> 315

<212> PRT

<213> B.fragilis

<400> 5556

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Asn Asn Tyr Met Lys Arg Ile Leu Val Ser Gly Gly Ala Gly Phe Ile
1          5          10          15
Gly Ser His Leu Cys Thr Arg Leu Ile Asn Glu Gly His Asp Val Ile
20          25          30
Cys Leu Asp Asn Phe Phe Thr Gly Ser Lys Glu Asn Ile Ile His Leu
35          40          45
Met Asp Asn His His Phe Glu Val Val Arg His Asp Ile Thr Phe Pro
50          55          60
Tyr Ser Ala Glu Val Asp Glu Ile Tyr Asn Leu Ala Cys Pro Ala Ser
65          70          75          80
Pro Ile His Tyr Gln Tyr Asp Ala Ile Gln Thr Ile Lys Thr Ser Val
85          90          95
Met Gly Ala Ile Asn Met Leu Gly Leu Ala Arg Arg Leu Asn Ala Lys
100          105          110
Ile Leu Gln Ala Ser Thr Ser Glu Val Tyr Gly Asp Pro Glu Val His
115          120          125
Pro Gln Pro Glu Ser Tyr Trp Gly Asn Val Asn Pro Ile Gly Ile Arg
130          135          140
Ser Cys Tyr Asp Glu Gly Lys Arg Cys Ser Glu Thr Leu Phe Met Asp
145          150          155          160
Tyr His Arg Gln Asn Asn Val Arg Ile Lys Ile Val Arg Ile Phe Asn
165          170          175
Thr Tyr Gly Pro Arg Met Leu Pro Asn Asp Gly Arg Val Val Ser Asn
180          185          190
Phe Leu Ile Gln Ala Leu Lys Asn Asp Asp Ile Thr Ile Tyr Gly Thr
195          200          205
Gly Glu Gln Thr Arg Ser Phe Gln Tyr Ile Asp Asp Leu Val Glu Gly
210          215          220
Met Ile Arg Met Met Asn Thr Gly Asp Asp Phe Ile Gly Pro Ile Asn

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225		230		235		240
Leu Gly Asn Pro	Asn Glu Phe Ser Met	Leu Gln Leu Ala Glu Lys Ile				
	245	250	255			
Ile Gln Lys Thr	Gly Ser Lys Ser Lys Ile Thr Phe Lys Pro Leu Pro					
	260	265	270			
His Asp Asp Pro	Gln Gln Arg Lys Pro Asp Ile Arg Leu Ala Gln Glu					
	275	280	285			
Lys Leu Gly Trp	Gln Pro Thr Ile Leu Leu Asp Glu Gly Leu Asp Arg					
	290	295	300			
Met Ile Asp Tyr Phe	Lys Met Lys Tyr Lys Leu					
305	310	315				

<210> 5557
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 5557
Phe Cys Asp Ile Ser Arg Lys Ala Cys Phe Leu Cys Gln Thr Pro Lys
1 5 10 15
Ala Ile Thr Met Asp Leu Glu Lys Val Leu Ile Arg Glu Ile Asn Asn
20 25 30
Asp Ser Arg Ile Phe Leu Tyr Lys Glu Gly Asp Cys Trp Ser Ala His
35 40 45
Asp Asn Ser Ala Arg His Leu Cys Phe Leu Tyr Ser Gln Phe Asn Ala
50 55 60
Tyr Asp Arg Ile Tyr Gln Ala Tyr Glu Ile Val Leu Lys Cys Val Met
65 70 75 80
Leu Ser Asn Ala Met Ile Glu Lys Phe Ile Glu His Thr Leu Val Ser
85 90 95
Thr Val His Glu Asp Glu Ile Glu Ile Cys Ile Pro Lys Glu Lys Arg
100 105 110
Ala Glu Phe Glu Ser Trp Arg Ser Thr Ser Gly Val
115 120

<210> 5558
 <211> 459
 <212> PRT
 <213> B.fragilis

<400> 5558
Leu Ile Arg Met Asp Trp Lys Ile Arg Asn Ile Arg Leu Gln Glu Leu
1 5 10 15
Arg Glu Ile Tyr Gln Glu Lys Leu Lys Asn Ile Ala Tyr Arg Val Tyr
20 25 30
Glu Ser His Phe Gln Asn Gly Ile Val Lys Gln Glu Glu Leu Glu Gly
35 40 45
Glu Ile Met Ser Tyr Tyr Gln His Thr Gln Pro Ser Leu Gln Glu Phe
50 55 60
Tyr Ser His Tyr Ala Thr Gln Trp Glu His Phe Tyr Glu Gly His Glu
65 70 75 80
Leu Thr Asp Ser Ala Phe Leu Arg Phe Leu Glu Asn Ser Ala Tyr Pro
85 90 95
Leu Gln Met Lys Tyr Asn Arg Gly Asp Leu Asn Leu Gln Tyr Tyr Ile
100 105 110
Asp Arg Phe His Thr Leu Lys Lys Arg Ser Lys Glu Trp Lys His Leu
115 120 125
Arg Asn Leu Phe Phe Asp Lys Trp Tyr His Leu Leu Ala Asn Asn Glu
130 135 140

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Tyr Asn Tyr Gln Ile Glu Arg Ile Asn Asn Leu Cys Glu Arg Phe Tyr
145          150          155          160
Arg Leu Gln Lys Asn Ile Ala Asp Gln Leu Pro Gln Arg Gly Asn Ala
          165          170          175
Arg Leu Met Trp Leu Leu Arg Thr His Gln Glu Leu Ala Lys Gln Leu
          180          185          190
Phe His Tyr Asp Glu Ile Ala Lys Asn His Pro Ala Ile Arg Glu Leu
          195          200          205
Thr Lys Ile Leu Gly Lys Gln His Tyr Gly Lys Glu Lys Lys Phe Arg
          210          215          220
Met Val Ala Gly Ile His Arg Glu Gln Ile Ile Thr His Ala Thr Lys
225          230          235          240
Ser Asp Ile Thr Gly Val Cys Glu Gly Asn Asp Leu Asn Ser Leu Leu
          245          250          255
Pro Ile Glu Tyr Cys Tyr Leu Ser Asp Pro Ala Leu Gln Pro Leu Phe
          260          265          270
Phe Glu Arg Phe Asn Lys Lys Lys Leu Gln Met Met Asp Tyr Glu Ser
          275          280          285
Lys Asp Gln His Arg Ile Lys Asp Ile Lys Ile Gln Gly Asn Glu Ile
          290          295          300
Val Glu Glu Gln Ser Gly Pro Phe Ile Ile Cys Val Asp Thr Ser Gly
305          310          315          320
Ser Met Ser Gly Glu Arg Glu Glu Phe Val Lys Ser Ala Ile Leu Ala
          325          330          335
Ile Ala Glu Leu Thr Glu Gln Gln Asp Arg Lys Cys Tyr Leu Ile Asn
          340          345          350
Phe Ser Asn Asp Ile Ala Cys Ile Glu Ile Glu Arg Leu Gly Gln Asn
          355          360          365
Ile Gln Glu Leu Ala Asn Phe Leu Cys Gln Ser Phe His Gly Gly Thr
          370          375          380
Asp Leu Thr Pro Ala Leu Leu His Ala Ile His Ile Leu Lys Thr Lys
385          390          395          400
Ser Tyr Arg Asn Ala Asp Leu Val Met Met Ser Asp Phe Glu Met Pro
          405          410          415
Pro Leu Asn Glu Glu Leu Ser Glu Glu Ile Lys Lys Ile Lys Gln Asn
          420          425          430
Lys Thr His Leu Tyr Ala Leu Ser Val His Lys Gln Ser Glu Asn Thr
          435          440          445
Tyr Leu Asn Val Cys Asn Lys Phe Trp Phe Val
          450          455

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<210> 5559

<211> 547

<212> PRT

<213> B.fragilis

<400> 5559

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Tyr Val Lys Ile Met Ser Met Phe Cys Phe Gln Cys Gln Glu Thr Ala
1          5          10          15
Lys Gly Thr Gly Cys Ile Leu Ser Gly Val Cys Gly Lys Thr Pro Glu
          20          25          30
Val Ala Asn Met Gln Asp Leu Leu Phe Val Val Arg Gly Ile Ala
          35          40          45
Val Tyr Asn Gln Ala Leu Arg Lys Asp Gly Arg Ser Ser Ala Arg Ala
          50          55          60
Asp Lys Phe Ile Phe Asp Ala Leu Phe Thr Thr Ile Thr Asn Ala Asn
65          70          75          80
Phe Asp Lys His Ser Ile Ile Glu Lys Ile Lys Lys Gly Leu Glu Leu
          85          90          95

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Lys Lys Asp Leu Ser Asn Gln Val Thr Ile Glu His Ala Pro Asp Glu
 100 105 110
 Cys Thr Trp Tyr Gly Asp Glu Thr Glu Phe Glu Glu Lys Ala Gln Thr
 115 120 125
 Val Gly Val Leu Arg Thr Ser Asp Glu Asp Ile Arg Ser Leu Lys Glu
 130 135 140
 Leu Val His Tyr Gly Ile Lys Gly Met Ala Ala Tyr Val Glu His Ala
 145 150 155 160
 Tyr Asn Leu Gly Tyr Glu Asn Pro Glu Ile Phe Ala Phe Met Gln Tyr
 165 170 175
 Ala Leu Ala Glu Leu Thr Arg Glu Asp Ile Thr Val Asp Glu Leu Ile
 180 185 190
 Thr Leu Thr Leu Ala Thr Gly Asn His Gly Val Gln Ala Met Ala Gln
 195 200 205
 Leu Asp Thr Ala Asn Thr Ser His Tyr Gly Asn Pro Glu Ile Ser Glu
 210 215 220
 Val Asn Ile Gly Val Arg Asn Asn Pro Gly Ile Leu Val Ser Gly His
 225 230 235 240
 Asp Leu Lys Asp Ile Glu Glu Leu Leu Gln Gln Thr Glu Gly Thr Gly
 245 250 255
 Ile Asp Ile Tyr Thr His Ser Glu Met Leu Pro Ala His Tyr Tyr Pro
 260 265 270
 Gln Leu Lys Lys Tyr Lys His Leu Val Gly Asn Tyr Gly Asn Ala Trp
 275 280 285
 Trp Lys Gln Lys Glu Glu Phe Glu Ser Phe Asn Gly Pro Ile Leu Phe
 290 295 300
 Thr Thr Asn Cys Ile Val Pro Pro Arg Pro Asn Ala Thr Tyr Lys Asp
 305 310 315 320
 Arg Ile Tyr Thr Thr Gly Ala Thr Gly Leu Glu Gly Ala Thr Tyr Ile
 325 330 335
 Pro Glu Arg Lys Asp Gly Lys Gln Lys Asp Phe Ser Val Ile Ile Glu
 340 345 350
 His Ala Arg Arg Cys Gln Pro Pro Val Ala Ile Glu Ser Gly Lys Ile
 355 360 365
 Val Gly Gly Phe Ala His Ala Gln Val Ile Ala Leu Ala Asp Lys Val
 370 375 380
 Val Glu Ala Val Lys Ser Gly Ala Ile Arg Lys Phe Phe Val Met Ala
 385 390 395 400
 Gly Cys Asp Gly Arg Met Lys Ser Arg Ser Tyr Tyr Thr Glu Phe Ala
 405 410 415
 Glu Lys Leu Pro Ala Asp Thr Val Ile Leu Thr Ala Gly Cys Ala Lys
 420 425 430
 Tyr Arg Tyr Asn Lys Leu Pro Leu Gly Asp Ile Asn Gly Ile Pro Arg
 435 440 445
 Val Leu Asp Ala Gly Gln Cys Asn Asp Ser Tyr Ser Leu Ala Ile Ile
 450 455 460
 Ala Met Lys Leu Gln Glu Val Phe Gly Leu Lys Asp Ile Asn Asp Leu
 465 470 475 480
 Pro Ile Val Tyr Asn Ile Ala Trp Tyr Glu Gln Lys Ala Val Ile Val
 485 490 495
 Leu Leu Ala Leu Leu Ala Leu Gly Val Lys Lys Ile His Leu Gly Pro
 500 505 510
 Thr Leu Pro Ala Phe Leu Ser Pro Asn Val Lys Gln Val Leu Ile Asp
 515 520 525
 Asn Phe Gly Ile Gly Gly Ile Ser Thr Ala Asp Glu Asp Ile Ala Lys
 530 535 540
 Phe Leu Ala
 545

<210> 5560
 <211> 169
 <212> PRT
 <213> B.fragilis

<400> 5560

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Thr Lys Lys Ile Met Ser Leu Leu Leu Pro Asp Ser Gly Leu Ile Phe
1      5      10      15
Trp Met Leu Leu Ser Phe Gly Ile Val Phe Ala Val Leu Ala Lys Tyr
      20      25      30
Gly Phe Pro Val Ile Ile Lys Met Val Glu Gly Arg Lys Thr Tyr Ile
      35      40      45
Asp Glu Ser Leu Glu Val Ala Arg Glu Ala Asn Ala Gln Leu Ser Arg
      50      55      60
Leu Lys Glu Glu Gly Glu Ala Ile Val Ala Ala Ala Asn Lys Glu Gln
65      70      75      80
Gly Arg Ile Met Lys Glu Ala Met Gln Glu Arg Glu Lys Ile Ile Tyr
      85      90      95
Glu Ala Arg Lys Gln Ala Glu Ile Ala Ala Gln Lys Glu Leu Asp Glu
      100     105     110
Val Lys Arg Gln Ile Gln Ile Glu Lys Asp Glu Ala Ile Arg Asp Ile
      115     120     125
Arg Arg Gln Val Ala Leu Leu Ser Val Asp Ile Ala Glu Lys Val Ile
      130     135     140
Arg Lys Asn Leu Asp Asp Lys Gln Glu Gln Met Gly Met Ile Asp Arg
145     150     155     160
Met Leu Asp Glu Val Leu Thr Lys Asn
      165

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<210> 5561
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 5561

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Gln Lys Lys Met Glu Val Gly Ile Ile Ser Met Arg Tyr Ala Lys Ala
1      5      10      15
Leu Met Ala Tyr Ala Glu Glu Arg Gly Ala Glu Glu Arg Leu Tyr His
      20      25      30
Glu Leu Val Thr Leu Ala His Ser Phe Arg Thr Val Lys Gly Phe Cys
      35      40      45
Ala Val Leu Asp Asn Pro Ile Val Ser Val Asn Glu Lys Phe Asn Leu
      50      55      60
Ile Cys Thr Ala Ala Asp Gly Asp His Lys Pro Ser Glu Glu Phe Ile
65      70      75      80
Arg Phe Ile Arg Leu Val Leu Lys Glu Arg Arg Glu Thr Tyr Leu Gln
      85      90      95
Phe Met Ser Leu Met Tyr Leu Asp Leu Tyr Arg Lys Lys Lys His Ile
      100     105     110
Gly Val Gly Lys Leu Ile Thr Ala Val Pro Val Asp Lys Ala Thr Glu
      115     120     125
Glu Arg Ile Arg Gln Thr Ala Ala His Ile Leu His Ala Tyr Met Glu
      130     135     140
Leu Glu Thr Val Val Asp Pro Ser Ile Glu Gly Gly Phe Val Phe Asp
145     150     155     160
Ile Asn Asp Tyr Arg Leu Asp Ala Ser Ile Ala Thr Gln Leu Lys Lys
      165     170     175
Val Lys Gln Gln Phe Ile Asp Lys Asn Arg Arg Ile Val
      180     185

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<210> 5562
 <211> 478
 <212> PRT
 <213> B.fragilis

<400> 5562

Thr	Met	Tyr	Leu	Ile	Ser	Ile	Ser	Ser	Leu	Ala	Gln	Arg	Ala	Lys	Ser	1	5	10	15
Val	Gly	Ile	His	Lys	Cys	Asn	Gly	Ala	Ser	Asp	Gly	His	Ile	Tyr	Arg	20	25	30	
Met	Phe	Leu	Tyr	Glu	Ser	Ala	Leu	Leu	Ile	Leu	Leu	Ser	Leu	Leu	Phe	35	40	45	
Val	Thr	Val	Leu	Leu	Phe	Thr	Phe	Lys	Leu	Glu	Ile	Glu	Asp	Leu	Ser	50	55	60	
Gly	Ala	Ser	Leu	Lys	Ala	Leu	Phe	Thr	Trp	Gln	Thr	Leu	Trp	Val	Pro	65	70	75	80
Ile	Leu	Val	Ser	Leu	Val	Leu	Phe	Leu	Val	Ile	Gly	Leu	Phe	Pro	Gly	85	90	95	
Lys	Leu	Phe	Ala	Ala	Ile	Pro	Val	Thr	Gln	Val	Phe	His	Arg	Phe	Thr	100	105	110	
Ala	His	Arg	Phe	Val	Trp	Lys	Arg	Ser	Leu	Leu	Phe	Ile	Gln	Phe	Ala	115	120	125	
Gly	Ile	Ala	Phe	Ile	Leu	Gly	Leu	Leu	Met	Val	Ile	Leu	Leu	Gln	Tyr	130	135	140	
His	Gln	Val	Met	Thr	Arg	Asp	Met	Gly	Tyr	Lys	Val	Asp	Asn	Leu	Ala	145	150	155	160
Val	Gly	Trp	Ser	Pro	Tyr	Arg	Glu	Ile	Asp	Lys	Met	Asp	Gly	Ile	Leu	165	170	175	
Arg	Gly	Leu	Pro	Ile	Val	Glu	Glu	Phe	Cys	Asn	Ala	Ser	Thr	Ile	Ile	180	185	190	
Tyr	Gly	Gly	Tyr	Met	Gly	Gln	Pro	Tyr	Thr	Asp	Ala	His	Gly	Lys	Glu	195	200	205	
Phe	Met	Gly	Arg	Ile	Glu	Phe	Val	Asp	Glu	His	Tyr	Val	Pro	Val	Met	210	215	220	
Gly	Leu	Gln	Ile	Ile	Lys	Gly	Arg	Asn	Ile	Gln	Gln	Asp	Lys	Glu	Ile	225	230	235	240
Leu	Ile	Asn	Glu	Glu	Met	Val	Arg	Gln	Ile	Gly	Trp	Thr	Asp	Ser	Pro	245	250	255	
Ile	Gly	Lys	Asn	Leu	Glu	Asp	Gly	Lys	Asn	Asn	Phe	Gly	Thr	Ile	Val	260	265	270	
Gly	Val	Val	Lys	Asp	Tyr	Val	Val	Gln	Ser	Ala	Tyr	Met	Pro	Gln	Ala	275	280	285	
Pro	Val	Ala	Leu	Met	Ser	Asn	Leu	Glu	Trp	Met	Asn	Val	Leu	Asn	Lys	290	295	300	
Arg	Asn	Ile	Ile	Leu	Lys	Glu	Pro	Phe	Gly	Glu	Asn	Leu	Ala	Lys	Ile	305	310	315	320
Asn	Thr	Leu	Met	Lys	Glu	Ala	Phe	Pro	Thr	Val	Asp	Ile	Val	Phe	Arg	325	330	335	
Ser	Ala	Arg	Gln	Glu	Ile	Asp	Lys	Gln	Tyr	Gln	Glu	Val	Arg	Arg	Phe	340	345	350	
Arg	Asn	Val	Val	Ile	Ile	Ala	Ser	Ile	Ala	Ile	Leu	Leu	Ile	Ala	Leu	355	360	365	
Met	Gly	Leu	Phe	Gly	Phe	Val	Asn	Asp	Glu	Ile	Gln	Arg	Arg	Ser	Lys	370	375	380	
Glu	Ile	Ala	Ile	Arg	Lys	Val	Asn	Gly	Ala	Glu	Val	Pro	Asp	Ile	Leu	385	390	395	400
Arg	Leu	Val	Ser	Gly	Asn	Ile	Phe	Trp	Thr	Ala	Leu	Ser	Ala	Val	Leu	405	410	415	

Val Gly Ile Val Phe Ala Tyr Ile Val Ser Asn Lys Trp Leu Glu Gln
 420 425 430
 Phe Ser Asp Arg Val Ser Val Asn Gly Gly His Phe Leu Val Val Ile
 435 440 445
 Ile Ile Ile Leu Leu Leu Ile Ile Gly Ser Val Ile Gly Arg Ser Trp
 450 455 460
 Asn Val Ala Asn Glu Asn Pro Val Asn Ser Ile Lys Asn Glu
 465 470 475

<210> 5563
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 5563
 Ser Phe Ile Val Ile Leu Leu Ile Phe Tyr Phe Cys Ile Phe Met Asn
 1 5 10 15
 Met Tyr Val Gly Asn Leu Ser Tyr Asn Val Lys Glu Ser Asp Leu Arg
 20 25 30
 Gln Val Met Glu Glu Tyr Gly Val Val Glu Ser Val Lys Leu Ile Thr
 35 40 45
 Asp Arg Glu Thr Arg Arg Ser Lys Gly Phe Ala Phe Val Glu Met Pro
 50 55 60
 Glu Ser Ser Glu Ala Ser Asn Ala Ile Lys Glu Leu Asn Gly Ala Glu
 65 70 75 80
 Tyr Ala Gly Arg Pro Met Val Val Lys Glu Ala Leu Pro Arg Asn
 85 90 95

<210> 5564
 <211> 306
 <212> PRT
 <213> B.fragilis

<400> 5564
 Pro Phe Asn Val Asp Pro Leu Ile Tyr Ser Leu Leu Leu Val Trp Tyr
 1 5 10 15
 Glu Leu Lys Val Ile Pro Leu Arg Pro Ile Phe Asn Leu Lys Arg Leu
 20 25 30
 Asp Met Ala Gly Tyr Ile Ser Asp Asp Thr Arg Lys Val Thr Thr His
 35 40 45
 Arg Leu Ile Glu Met Lys Gln Arg Gly Glu Lys Ile Ser Met Leu Thr
 50 55 60
 Ser Tyr Asp Tyr Thr Met Ala Gln Ile Val Asp Gly Ala Gly Ile Asp
 65 70 75 80
 Val Ile Leu Val Gly Asp Ser Ala Ser Asn Val Met Ala Gly Asn Val
 85 90 95
 Thr Thr Leu Pro Ile Thr Leu Asp Gln Met Ile Tyr His Gly Lys Ser
 100 105 110
 Val Val Arg Gly Val Lys Arg Ala Met Val Val Val Asp Met Pro Phe
 115 120 125
 Gly Ser Tyr Gln Gly Asn Glu Met Glu Gly Leu Ala Ser Ala Ile Arg
 130 135 140
 Ile Met Lys Glu Ser His Ala Asp Ala Leu Lys Leu Glu Gly Gly Glu
 145 150 155 160
 Glu Ile Ile Asp Thr Val Lys Arg Ile Leu Ser Ala Gly Ile Pro Val
 165 170 175
 Met Gly His Leu Gly Leu Met Pro Gln Ser Ile Asn Lys Tyr Gly Thr
 180 185 190
 Tyr Thr Val Arg Ala Lys Asp Asp Ala Glu Ala Glu Lys Leu Ile Arg

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      195              200              205
Asp Ala His Leu Leu Glu Glu Ala Gly Cys Phe Gly Leu Val Leu Glu
  210              215              220
Lys Ile Pro Ala Ala Leu Ala Ser Arg Val Ala Ser Glu Leu Thr Ile
  225              230              235              240
Pro Val Ile Gly Ile Gly Ala Gly Gly Asp Val Asp Gly Gln Val Leu
      245              250              255
Val Ile Gln Asp Met Leu Gly Met Asn Asn Gly Phe Arg Pro Arg Phe
      260              265              270
Leu Arg Arg Tyr Ala Asp Leu Tyr Thr Val Met Thr Asp Ala Ile Ser
      275              280              285
His Tyr Val Ser Asp Val Lys Asn Cys Asp Phe Pro Asn Glu Lys Glu
      290              295              300
Gln Tyr
  305

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<210> 5565

<211> 443

<212> PRT

<213> B.fragilis

<400> 5565

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Asp Glu Lys Val Trp Phe Met Lys Ile His Leu Lys Leu Leu Thr Glu
  1              5              10              15
Arg Tyr Trp Phe Arg Leu Gly Leu Ser Leu Cys Phe Ala Ile Thr Ala
      20              25              30
Ala Leu Ser Tyr Ala Asp Arg Asp Phe Ile Trp Met Gly Leu Ser Leu
      35              40              45
Cys Leu Leu Leu Phe Ser Ile Trp Trp Gln Leu Ser Leu Tyr Arg Ile
      50              55              60
His Thr Lys Arg Val Leu Phe Met Ile Asp Ala Leu Glu Asn Asn Asp
      65              70              75              80
Ser Ala Ile His Phe Pro Glu Glu Gln Ile Met Pro Glu Thr Arg Glu
      85              90              95
Val Asn Arg Ala Leu Asn Arg Val Gly Arg Ile Leu Tyr Asn Val Lys
      100              105              110
Ser Glu Thr Val Gln Gln Glu Lys Tyr Tyr Glu Leu Ile Met Asp Cys
      115              120              125
Ile Asn Thr Gly Val Leu Val Leu Asn Glu Asn Gly Ala Val Tyr Gln
      130              135              140
Lys Asn Asn Glu Ala Leu Arg Leu Leu Gly Leu Asn Val Phe Thr His
      145              150              155              160
Ile Arg Gln Leu Asn Lys Val Asp Ile Gln Leu Met Lys Lys Ile Glu
      165              170              175
Phe Cys Arg Pro Gly Asp Lys Ile Gln Thr Ile Phe Asn Asn Glu Arg
      180              185              190
Gly Thr Ile Asn Leu Ser Ile Arg Val Ser Gly Ile Thr Val Arg Glu
      195              200              205
Glu Gln Leu Arg Ile Leu Ala Phe Asn Asp Ile Asn Ser Glu Leu Asp
      210              215              220
Glu Lys Glu Ile Asp Ser Trp Ile Arg Leu Thr Arg Val Leu Thr His
      225              230              235              240
Glu Ile Met Asn Ser Val Thr Pro Ile Thr Ser Leu Ser Glu Thr Leu
      245              250              255
Leu Ser Leu Ala Asp Thr Arg Asp Glu Glu Ile Arg Arg Gly Leu Gln
      260              265              270
Thr Ile Ser Thr Thr Gly Lys Gly Leu Leu Ser Phe Val Glu Ser Tyr
      275              280              285
Arg Arg Phe Thr Arg Ile Pro Thr Pro Glu Pro Ser Leu Phe Tyr Val

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195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305

290	295	300
Lys Ala Phe Ile Asp Arg Met Val Glu Leu Ala Arg His Gln Asn Lys		
305	310	315
Cys Asp Asn Ile Thr Phe His Ile Asp Ile Ala Pro Ala Asp Leu Ile		320
	325	330
Val Tyr Ala Asp Glu Asn Leu Ile Ser Gln Val Val Ile Asn Leu Leu		335
	340	345
Lys Asn Ala Ile Gln Ala Ile Asp Ala Gln Ala Asp Gly Lys Ile Glu		350
	355	360
Ile Lys Gly Arg Cys Asn Ala Ala Glu Glu Ile Leu Ile Glu Ile Lys		365
	370	375
Asn Asn Gly Pro Ala Ile Pro Ser Asp Ile Ala Asp His Ile Phe Ile		380
385	390	395
Pro Phe Phe Thr Thr Lys Glu Gly Gly Ser Gly Ile Gly Leu Ser Ile		400
	405	410
Ser Arg Gln Ile Met Arg Leu Ser Gly Gly Ser Ile Thr Leu Leu Gln		415
	420	425
Gly Lys Glu Thr Lys Phe Ile Leu Lys Phe Lys		430
	435	440

<210> 5566

<211> 240

<212> PRT

<213> B.fragilis

<400> 5566

Asn Leu Met Val Met Ile Met Lys Trp Leu Asn Phe Asn Ser Ile Ile		
1	5	10
Gly Met Ala Val Leu Ser Leu Leu Phe Tyr Thr Glu Asn Val Ala Ala		15
	20	25
Gln Thr Asp Lys Asn Asp Thr Lys Gln Lys Ile Asp Thr Ile Gln Thr		30
	35	40
Thr Gln Pro Glu Tyr Ser Lys Tyr Asp Lys Arg Ile His Arg Phe Arg		45
	50	55
Lys Gly Trp Asn Ser Leu Ile Pro Thr His Asn Lys Ile Gln Tyr Ala		60
65	70	75
Gly Asn Met Gly Met Phe Ser Phe Gly Thr Gly Trp Asp Tyr Gly Lys		80
	85	90
Arg Asp Gln Trp Glu Thr Asp Leu Phe Phe Gly Phe Ile Pro Lys His		95
	100	105
Asp Ser His Arg Ala Lys Met Thr Met Thr Leu Lys Gln Asn Tyr Met		110
	115	120
Pro Trp Ser Leu Glu Leu Gly Lys Gly Phe Ser Thr Glu Pro Leu Ala		125
	130	135
Cys Gly Ile Tyr Phe Asn Thr Val Phe Gly His Glu Phe Trp Val His		140
145	150	155
Glu Pro Ser Arg Tyr Pro Glu Gly Tyr Tyr Gly Phe Ser Ser Lys Ile		160
	165	170
Arg Thr His Ile Phe Leu Gly Gln Arg Leu Thr Tyr Asp Ile Asp Arg		175
	180	185
Glu Arg Arg Phe Phe Ala Lys Ser Val Thr Leu Phe Tyr Glu Leu Ser		190
	195	200
Thr Cys Asp Leu Leu Leu Ile Ser Arg Val Thr Asn Ser Tyr Leu Arg		205
	210	215
Ala Arg Asp Tyr Leu Ser Leu Ser Phe Gly Leu Lys Phe Gln Trp Leu		220
225	230	235
		240

<210> 5567

<211> 84

<212> PRT

<213> B.fragilis

<400> 5567

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Leu Asp Ile Phe Asn Ser Gln Gly Glu Gly Phe Ser Gly Pro Gly Gly
1          5          10          15
Gly Phe Ile Asp Asn Glu Phe Ala His Ser Gln Phe Val Leu Asp Asn
          20          25          30
Asp Tyr Phe Leu Phe Thr Ile Ser Asn Gly Thr Arg Ile Glu Thr Pro
          35          40          45
Phe Phe Ile Lys Leu Phe Arg Leu Gly Tyr Lys Arg Ser Leu Lys Glu
          50          55          60
Ser Gln Leu Arg Cys Ser Ile Trp Val His Pro Ala Ser Ala Ser Ala
65          70          75          80
Arg Pro Arg Gly

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<210> 5568

<211> 422

<212> PRT

<213> B.fragilis

<400> 5568

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Leu Ser Phe Ser Leu Phe Tyr Arg Asn His Leu Val Ala Arg Ser Gly
1          5          10          15
Phe Ile Gly Arg Lys Val Val Phe Leu Arg His Tyr Ile Leu Lys Tyr
          20          25          30
Ser Ile Met Lys Lys Ile Leu Leu Leu Gly Ser Gly Glu Leu Gly Lys
          35          40          45
Glu Phe Val Ile Ser Ala Gln Arg Lys Gly Gln His Ile Ile Ala Cys
          50          55          60
Asp Ser Tyr Ala Gly Ala Pro Ala Met Gln Val Ala Asp Glu Cys Glu
65          70          75          80
Val Phe Asp Met Leu Asn Gly Glu Glu Leu Glu Arg Ile Val Lys Lys
          85          90          95
His Arg Pro Asp Ile Ile Val Pro Glu Ile Glu Ala Ile Arg Thr Glu
          100          105          110
Arg Leu Tyr Asp Phe Glu Lys Glu Gly Ile Gln Val Val Pro Ser Ala
          115          120          125
Arg Ala Val Asn Tyr Thr Met Asn Arg Lys Ala Ile Arg Asp Leu Ala
          130          135          140
Ala Lys Glu Leu Gly Leu Lys Thr Ala Lys Tyr Tyr Tyr Ala Lys Ser
145          150          155          160
Leu Glu Glu Leu Lys Glu Ala Ala Glu Lys Ile Gly Phe Pro Cys Val
          165          170          175
Val Lys Pro Leu Met Ser Ser Ser Gly Lys Gly Gln Ser Leu Val Lys
          180          185          190
Ser Ala Ala Glu Leu Glu His Ala Trp Glu Tyr Gly Cys Asn Gly Ser
          195          200          205
Arg Gly Asp Ile Arg Glu Leu Ile Ile Glu Glu Phe Ile Lys Phe Asp
          210          215          220
Ser Glu Ile Thr Leu Leu Thr Val Thr Gln Lys Asn Gly Pro Thr Leu
225          230          235          240
Phe Cys Pro Pro Ile Gly His Val Gln Lys Gly Gly Asp Tyr Arg Glu
          245          250          255
Ser Phe Gln Pro Ala His Ile Asp Pro Ala His Leu Lys Glu Ala Glu
          260          265          270
Asp Met Ala Glu Lys Val Thr Arg Ala Leu Thr Gly Ala Gly Leu Trp
          275          280          285

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Gly Val Glu Phe Phe Leu Ser His Glu Asn Gly Val Tyr Phe Ser Glu
 290 295 300
 Leu Ser Pro Arg Pro His Asp Thr Gly Met Val Thr Leu Ala Gly Thr
 305 310 315 320
 Gln Asn Leu Asn Glu Phe Glu Leu His Leu Arg Ala Val Leu Gly Leu
 325 330 335
 Pro Ile Pro Gly Ile Lys Gln Glu Arg Ile Gly Ala Ser Ala Val Ile
 340 345 350
 Leu Ser Pro Ile Ala Ser Gln Glu Arg Pro Gln Tyr Arg Gly Met Glu
 355 360 365
 Glu Val Thr Gly Glu Glu Asp Thr Tyr Leu Arg Ile Phe Gly Lys Pro
 370 375 380
 Tyr Thr Arg Val Asn Arg Arg Met Gly Val Val Leu Cys Tyr Ala Pro
 385 390 395 400
 Asn Gly Ser Asp Leu Asp Ala Leu Arg Asp Lys Ala Lys Arg Ile Ala
 405 410 415
 Asp Lys Val Glu Val Tyr
 420

<210> 5569

<211> 214

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (33)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5569

Asn Lys Arg Phe Met Arg Ser Leu Ile Gly Lys Gln Ala Pro Lys Phe
 1 5 10 15
 Asp Ala Thr Ala Val Ile Asn Gly His Glu Ile Val Gln Asn Phe Arg
 20 25 30
 Xaa Asp Gln Tyr Lys Gly Lys Lys Tyr Val Val Phe Phe Phe Tyr Pro
 35 40 45
 Met Asp Phe Thr Phe Val Cys Pro Thr Glu Leu His Ala Phe Gln Glu
 50 55 60
 Lys Leu Glu Glu Phe Glu Lys Arg Asp Val Ala Val Val Gly Cys Ser
 65 70 75 80
 Val Asp Ser Glu Tyr Ser His Phe Ser Trp Leu Gln Met Pro Lys Asn
 85 90 95
 Glu Gly Gly Ile Gln Gly Val Lys Tyr Pro Ile Val Ser Asp Phe Ser
 100 105 110
 Lys Ser Ile Ser Glu Ser Tyr Gly Val Leu Ala Gly Ser Tyr Ala Pro
 115 120 125
 Asp Glu Asn Gly Asn Trp Val Cys Glu Gly Thr Pro Val Ala Phe Arg
 130 135 140
 Gly Leu Phe Leu Ile Asp Lys Glu Gly Val Val Arg His Cys Val Ile
 145 150 155 160
 Asn Asp Leu Pro Leu Gly Arg Asn Val Asp Glu Val Leu Arg Met Val
 165 170 175
 Asp Ala Leu Gln His Phe Glu Glu Tyr Gly Glu Val Cys Pro Ala Asn
 180 185 190
 Trp Ser Lys Gly Lys Asp Ala Met Lys Ala Thr Glu Asp Gly Val Ala
 195 200 205
 Asn Tyr Leu Ser Lys His
 210

Gln Gln Glu Leu Asn Glu Asn Met Gln Asn Lys
 290 295

<210> 5572
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 5572
 Pro Leu Thr Phe Met Glu Ile Tyr Asn His Phe Glu Tyr Gly Lys Thr
 1 5 10 15
 Leu Ala Ile Arg Leu Lys Pro Ile Ala His Thr Pro Glu Lys Pro Arg
 20 25 30
 Phe Phe Thr Ala Phe Gly Leu Glu Asp Leu Tyr Asn Phe Asn Asp Lys
 35 40 45
 Leu Ser Ser Val Ser Gly Met Ile Leu Ile Ala Val Asp Gly Cys Glu
 50 55 60
 Ser Glu Ser Lys Arg Asn Glu Ser Asp Ala Leu Asn Asn Asn Asp Ile
 65 70 75 80
 Phe Ser Phe Ile Val Val Gln Asn Thr Val Ser Asp Arg Pro Glu Thr
 85 90 95
 Val Asn Gln Ala Ala Lys Glu Cys Lys Ala Ile Ala Lys Gln Ile Arg
 100 105 110
 Asn His Ile Leu Gln Asp Pro Asp Ile Ser Glu Phe Ile Asp Asp Thr
 115 120 125
 Ile Gln Phe Asn Gly Ile Gly Pro Ile Gly Asp Asn Phe Tyr Gly Val
 130 135 140
 Val Leu Thr Phe Ser Leu Val Gln Pro Glu Thr Tyr Phe Ile Asp Gln
 145 150 155 160
 Thr Tyr Trp Glu Asp
 165

<210> 5573
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 5573
 Ile Tyr Pro Pro Thr Ser Asn Val Tyr Leu Lys Met His Met Ser Asp
 1 5 10 15
 Lys Tyr Glu Met Leu Ser Leu Ile His Asn Thr Ile Val Phe Lys Glu
 20 25 30
 Glu Ser Tyr Met Thr Thr Thr His His Gln Val Asn Ile Leu Ser Cys
 35 40 45
 Lys Val Phe Leu Met Lys Asn Gly Arg Arg Asn Met Ser Thr Leu Phe
 50 55 60
 Ser Tyr Leu
 65

<210> 5574
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 5574
 Met Ser Gln Pro Phe Phe Gln Phe Lys Gln Phe Thr Val Trp His Asp
 1 5 10 15
 Lys Cys Ala Met Lys Val Gly Thr Asp Gly Val Leu Leu Gly Ala Trp
 20 25 30

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Thr Pro Val Glu Ser Ser Ala Arg Ile Leu Asp Ile Gly Thr Gly Thr
 35          40          45
Gly Leu Val Ala Leu Met Leu Ala Gln Arg Cys Ser Ala Ser Val Ile
 50          55          60
Ala Leu Glu Ile Asp Gly Thr Ala Ala Gln Gln Ala Ala Glu Asn Ile
 65          70          75          80
Thr Arg Ser Pro Trp Gly Ser Arg Ile Glu Val Val Cys Gln Asp Phe
      85          90          95
Arg Leu Tyr Ser Asn Lys Asn Asn Ser Leu Lys Tyr Asp Thr Ile Val
      100          105          110
Ser Asn Pro Pro Tyr Phe Thr Asp Ser Leu Lys Cys Pro Asp Ser Gln
      115          120          125
Arg Asn Thr Ala Arg His Asn Asp Asn Leu Ser Tyr Glu Glu Leu Leu
      130          135          140
Lys Gly Val Ser Asn Leu Leu Ser Pro Asn Gly Thr Phe Thr Val Val
      145          150          155          160
Ile Pro Met Asp Ala Ser Asp Ser Phe Lys Asp Ile Ala Ser Ser Gln
      165          170          175
Gly Leu Tyr Pro Ser Arg Gln Leu Leu Val Ile Thr Lys Pro Gly Ala
      180          185          190
Pro Pro Lys Arg Thr Leu Ile Ser Phe Thr Phe Ile Lys Gln Asp Cys
      195          200          205
Lys Glu Glu Lys Leu Leu Thr Glu Val Ser Arg His Arg Tyr Ser Asp
      210          215          220
Glu Tyr Ile Lys Leu Thr Arg Glu Phe Tyr Leu Lys Met
      225          230          235

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<210> 5575

<211> 159

<212> PRT

<213> B.fragilis

<400> 5575

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Glu Pro Glu Pro Asn Leu Ser Arg Lys Lys Ile Ile Ala Gly Tyr His
 1          5          10          15
Asn Arg Gln Val Asn Ser Phe Ser Asn Leu Asn Ile Lys Thr Met Ser
      20          25          30
Val Asn Lys Cys Ile Phe Ile Gly Asn Met Gly Arg Asp Ala Glu Val
      35          40          45
Arg Thr Thr Glu Thr Gly Ile Lys Val Ala Gln Phe Ser Ile Ala Cys
      50          55          60
Thr Glu Arg Ala Tyr Thr Asn Lys Ala Gly Gln Thr Ile Pro Glu Arg
      65          70          75          80
Thr Glu Trp Ile Pro Val Val Ala Trp Arg Arg Leu Ala Glu Thr Ile
      85          90          95
Glu Lys Tyr Thr His Lys Gly Ser Lys Leu Tyr Ile Glu Gly Arg Phe
      100          105          110
Thr Thr Arg Lys Tyr Glu Thr Asn Asp Gly Gln Lys Arg Thr Val Ser
      115          120          125
Glu Ile Val Ala Glu Ser Ile Glu Met Leu Asp Pro Lys Arg Asp Ala
      130          135          140
Pro Ser Leu Pro Pro Glu Pro Glu Gln Lys Leu Ser Tyr Asn Pro
      145          150          155

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<210> 5576

<211> 202

<212> PRT

<213> B.fragilis

<400> 5576

Ser Arg Lys Phe Met Tyr Gln Phe Ile Glu Thr Ile Arg Ile Glu Arg
 1 5 10 15
 Gly Val Val Tyr Asn Leu Asp Tyr His Thr Glu Arg Met Asn Gln Thr
 20 25 30
 Arg Ala Val Phe Trp Pro Asp Glu Pro Pro Leu Asn Leu Ser Glu Ser
 35 40 45
 Leu Gln Pro Ile Met Asn Val Glu Met Ile Lys Cys Arg Val Val Tyr
 50 55 60
 Ser Arg Trp Ile Glu Glu Ile Leu Tyr Thr Pro Tyr Gln Ile Arg Pro
 65 70 75 80
 Val His Ser Leu Gln Ile Val His Ser Asp Asn Ile Asp Tyr Thr Tyr
 85 90 95
 Lys Ser Thr Asp Arg Ser Ala Ile Asn Glu Leu Tyr Met His Lys Arg
 100 105 110
 Glu Gln Asp Glu Ile Leu Ile Thr Arg Asn Gly Leu Leu Thr Asp Thr
 115 120 125
 Ser Ile Ala Asn Ile Ala Leu Phe Asn Gly Lys Glu Trp His Thr Pro
 130 135 140
 Lys His Pro Leu Leu Lys Gly Val Gln Arg Ala Ala Leu Ile Asp Lys
 145 150 155 160
 His Leu Ile Arg Glu Lys Glu Ile Thr Val Asp Gln Leu Phe Asn Tyr
 165 170 175
 Ser Gln Ile Cys Leu Phe Asn Ala Met Ile Asp Phe Gly Lys Ile Lys
 180 185 190
 Ile Asp Val Asn Arg Glu Leu Ile Arg Ile
 195 200

<210> 5577

<211> 419

<212> PRT

<213> B.fragilis

<400> 5577

Thr Met Lys Phe Ser Glu Leu Gln Leu Asn Asp Asn Val Leu Glu Ala
 1 5 10 15
 Leu Asp Ala Met Arg Phe Glu Glu Cys Thr Pro Ile Gln Glu Gln Ala
 20 25 30
 Ile Pro Val Ile Leu Glu Gly Arg Asp Leu Ile Ala Val Ala Gln Thr
 35 40 45
 Gly Thr Gly Lys Thr Ala Ala Phe Leu Leu Pro Ile Leu Asn Lys Leu
 50 55 60
 Ser Glu Gly Gly His Pro Glu Asp Ala Ile Asn Cys Val Ile Met Ser
 65 70 75 80
 Pro Thr Arg Glu Leu Ala Gln Gln Ile Asp Gln Gln Met Glu Gly Phe
 85 90 95
 Ser Tyr Phe Met Pro Val Ser Ser Val Ala Val Tyr Gly Gly Asn Asp
 100 105 110
 Gly Ile Leu Phe Glu Gln Gln Lys Lys Gly Leu Met Leu Gly Ala Asp
 115 120 125
 Val Val Ile Ala Thr Pro Gly Arg Leu Ile Ala His Leu Ser Leu Gly
 130 135 140
 Tyr Val Asp Leu Ser Arg Val Ser Tyr Phe Ile Leu Asp Glu Ala Asp
 145 150 155 160
 Arg Met Leu Asp Met Gly Phe Tyr Glu Asp Ile Met Gln Ile Val Lys
 165 170 175
 Tyr Leu Pro Lys Glu Arg Gln Thr Ile Met Phe Ser Ala Thr Met Pro
 180 185 190
 Ala Lys Ile Gln Gln Leu Ala Asn Thr Ile Leu Asn Asn Pro Ala Glu

195	200	205
Val Lys Leu Ala Val Ser Lys Pro Ala Glu Lys Ile Val Gln Ala Ala		
210	215	220
Tyr Val Cys Tyr Glu Asn Gln Lys Leu Gly Ile Val Arg Ser Leu Phe		
225	230	235
Ala Glu Glu Val Pro Glu Arg Val Ile Ile Phe Ala Ser Ser Lys Ile		
245	250	255
Lys Val Lys Glu Val Ala Lys Ala Leu Lys Met Met Lys Leu Asn Val		
260	265	270
Gly Glu Met His Ser Asp Leu Glu Gln Val Gln Arg Glu Phe Ile Met		
275	280	285
His Glu Phe Lys Ser Gly Arg Ile Asn Ile Leu Val Ala Thr Asp Ile		
290	295	300
Val Ser Arg Gly Ile Asp Ile Asp Asp Ile Arg Leu Val Ile Asn Phe		
305	310	315
Asp Val Pro His Asp Ser Glu Asp Tyr Val His Arg Ile Gly Arg Thr		
325	330	335
Ala Arg Ala Asn Asn Asp Gly Val Ala Leu Thr Phe Val Asn Glu Lys		
340	345	350
Glu Gln Thr Asn Phe Lys Asn Ile Glu Asn Phe Leu Glu Lys Glu Ile		
355	360	365
Tyr Lys Ile Pro Val Pro Ala Glu Leu Gly Glu Ala Pro Gln Tyr Asn		
370	375	380
Pro Arg Ser Tyr Thr Asn Ala Gly Arg Gly Gly Arg Asn Phe Arg Asn		
385	390	395
Gly Asn Arg Lys Asn Asn Asn Gly Gly Arg Ser Thr Ala Pro Arg Ser		
405	410	415
Gly Arg Arg		

<210> 5578

<211> 156

<212> PRT

<213> B.fragilis

<400> 5578

Met Ile Thr Thr Lys Ile Glu Val Pro Pro His Leu Cys Glu Tyr Ile	
1	5
Arg Gly Lys Tyr Cys Asn Leu Thr Ser Asp Pro Val Arg Phe Pro Asp	
20	25
Asn Leu Asn Ile Tyr His Val Ile Phe Asp Leu Leu Gln Lys Arg Pro	
35	40
Ser Glu Ala Pro Val Asp Arg Gly Asn Leu Glu Ile Cys Leu Pro Glu	
50	55
Arg Ser Ile Gly Lys Ser Pro Val Thr Tyr Asn Tyr Leu Gly Leu Arg	
65	70
Ser Gln Val Ile Ile Ser Arg Lys Ile Glu Leu Met Met Trp Ala Glu	
85	90
Leu His Glu Tyr Leu Asp Glu Gln Lys His Arg Tyr Gly Ile Lys Tyr	
100	105
Ile Asp Gly Val Gln Phe Phe Met Arg Arg Tyr Gly Ile Asp Ser Leu	
115	120
Thr Glu Glu Ala Phe Leu Lys His Tyr Gln Arg Trp Arg Ala Lys Val	
130	135
Arg Arg Lys Glu Lys Arg Ser Tyr Lys Lys Arg Glu	
145	150
	155

<210> 5579

<211> 103

<212> PRT

<213> B.fragilis

<400> 5579

Glu Asp Asp Thr Gly Asp Asn Gly Tyr Thr Phe Thr Ser Cys Ile Pro
 1 5 10 15
 Thr Ser Ser Tyr Asn Ser Gly Leu Asp Ser Asp Lys Thr Tyr Asn Asn
 20 25 30
 Thr Lys Val Tyr His Ser Ser Ser Leu Ile Gln Val Ile Lys Ser Glu
 35 40 45
 Leu Thr His Glu Ala Ala Leu Leu His Val Leu Phe Leu Ser Val Met
 50 55 60
 Cys Leu Arg Ile Ile Gly Tyr Arg Arg Gly Leu Met Leu Ser Ser Tyr
 65 70 75 80
 Ser Trp His Ser Pro Phe Phe Ser Phe Ser Ile Trp Leu Ile Arg Leu
 85 90 95
 Arg Ile Ala Ile Asn Leu Ser
 100

<210> 5580

<211> 103

<212> PRT

<213> B.fragilis

<400> 5580

Ala Gly Cys Thr Ser Leu Leu Ala Asn Lys Thr Lys Ala Gln Ile Gln
 1 5 10 15
 Ala Ile Asn Asp Ile Val Ile Ala Ile Val Phe Asn Ile Arg Ser Trp
 20 25 30
 Pro Leu Val Asn Ala Pro Ser Gly Ile Pro Leu Pro Ile Ile Phe Glu
 35 40 45
 Leu Ala Gly Ile Asn Glu Lys Arg Val Glu Asp Val Ala Ala Val Ala
 50 55 60
 Ile Gln Val Val Ile Ser Pro Thr Pro Ala Thr Thr Cys Pro Ala Thr
 65 70 75 80
 Lys Glu Glu Val Glu Val Asp Arg Val Asn Met Gln Ile Pro Pro Ile
 85 90 95
 Ile Val Thr Thr Ala Ala Arg
 100

<210> 5581

<211> 380

<212> PRT

<213> B.fragilis

<400> 5581

Leu Gln Cys Thr Met Ser Leu Thr Ala Asn Ile Tyr Pro Ser Thr Ile
 1 5 10 15
 Ala Leu Ala Gly Asn Pro Ile Lys Leu Thr Ile Asn Ser Ser Ser Val
 20 25 30
 Val Ser Tyr Thr Ile Arg Gln Ala Asp Arg Thr Ile Phe Ser Gly Ser
 35 40 45
 Gly Glu Gly Glu Phe Ser Val Phe Leu Gln Asp Ile Leu Ser Gly Ile
 50 55 60
 Leu Ser Pro Lys His Leu Leu Asn Glu Ser Thr Asp Ile Leu Leu Leu
 65 70 75 80
 Asp Ser Thr Ser Ala Thr Asp Ile Ala Ile Ser Val Gln Asn Thr Gln
 85 90 95
 Gly Glu Thr Lys Thr Leu Ser Leu Lys Ala Val Ile Gly Gly Ile Ser


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<210> 5582
<211> 322
<212> PRT
<213> B.fragilis
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Lys	Tyr	Arg	Phe	Asn	Leu	Arg	Asn	Arg	Arg	Lys	Met	Asn	Ala	Ile	Ile
1				5					10					15	
Pro	Asp	Ile	Asp	Thr	Leu	Lys	Lys	Val	Val	Lys	Ile	Asn	Ala	Thr	Leu
			20					25					30		
Pro	Asp	Glu	Ala	Ile	Asn	Pro	Tyr	Ile	Asp	Asp	Ala	Met	Asp	Ile	Tyr
			35				40					45			
Leu	Thr	Pro	Tyr	Ile	Gly	Ile	Lys	Thr	Val	Glu	Lys	Ala	Leu	Thr	Gly
			50			55					60				
Thr	Asp	Lys	Arg	Leu	Asn	Asp	Lys	Ile	Leu	Arg	Thr	Leu	Gly	Pro	Leu
65					70					75				80	
Thr	Leu	Met	Leu	Ala	Thr	Pro	Glu	Leu	Gly	Ile	Arg	Ile	Gly	Asp	Ser
				85					90					95	
Gly	Ile	Thr	Val	Glu	Asn	Lys	Gln	Gly	Thr	Tyr	Ser	Pro	Ala	Asn	Glu
			100					105					110		
Ala	Lys	Ile	Ala	Ala	Ala	Lys	Glu	Ser	Phe	Tyr	Phe	Arg	Gly	Met	Gln
			115				120					125			
Ala	Leu	Asp	Arg	Leu	Leu	Thr	Phe	Leu	Thr	Asp	His	Pro	Glu	Thr	Tyr

130	135	140
Pro Glu Tyr Ala Glu His Cys Lys Gln Ala Thr Asp Ser Ser Cys Phe		
145	150	155
Ile Arg Asp Ala Arg Glu Phe Gln Asp Thr Gly Leu Val Asn Ile Glu		160
	165	170
Tyr Ser Thr Val Ser Phe Arg Met Met Leu Pro Thr Val Arg Gln Leu		175
	180	185
Gln Glu Arg Asn Val Arg Glu Met Leu Lys Glu Asp Leu Tyr Gln Arg		190
	195	200
Leu Leu Asp Ala His Thr Ala Gly Lys Glu Leu Thr Pro Lys Glu Lys		205
	210	215
Val Leu Leu Gly His Ile Leu Arg Tyr Leu Ala Asn Lys Thr Ala Glu		220
225	230	235
Leu Tyr Thr Ser Gln Thr Ser Arg Glu Gln Arg Thr Ile Asn Asp Thr		240
	245	250
Pro Glu Phe Thr Pro Ile Ile Arg Pro Ile Tyr Gln Asp Gln Ala Ala		255
	260	265
Thr Gly Asn Phe Phe Ala Asp Gln Ala Thr Tyr Tyr Ala Gly Lys Ile		270
	275	280
Gln Asn Phe Ile Ser Glu Asn Ala Glu Glu Leu Gly Val Thr Pro Thr		285
	290	295
Val Thr Ala Ile Asn Phe Asn Ser Lys Glu Lys Arg Ile Phe Thr Ser		300
305	310	315
Ile Ser		320

<210> 5583

<211> 262

<212> PRT

<213> B.fragilis

<400> 5583

Asn Met Ile Thr Trp Asp Asn Phe Tyr Leu Phe Ala Val Ala Ser Ile		
1	5	10
Cys Leu Trp Leu Thr Gly Ala Ile Phe Ala Leu Arg Ser Ser Val Arg		15
	20	25
Ser Arg Met Ala Val Val Leu Thr Ile Ala Gly Ile Thr Cys Leu Gly		30
	35	40
Ile Phe Ile Ala Gly Leu Trp Ile Ser Leu Gln Arg Pro Pro Leu Arg		45
	50	55
Thr Met Gly Glu Thr Arg Leu Trp Tyr Ser Phe Phe Met Gly Ile Ala		60
65	70	75
Gly Leu Leu Thr Tyr Ile Arg Trp Lys Tyr Arg Trp Ile Leu Ser Phe		80
	85	90
Ser Thr Leu Leu Ser Thr Val Phe Val Ile Ile Asn Leu Leu Lys Pro		95
	100	105
Glu Ile His Asp Gln Ser Leu Met Pro Ala Leu Gln Ser Ile Trp Phe		110
	115	120
Ile Pro His Val Thr Val Tyr Met Phe Ser Tyr Ser Val Leu Gly Cys		125
	130	135
Ala Phe Ile Ile Ala Leu Cys Gly Leu Val His His Lys Glu Glu Tyr		140
145	150	155
Leu Val Thr Ala Asp Asn Leu Val Tyr Ser Gly Val Ala Phe Leu Ser		160
	165	170
Ile Gly Met Leu Leu Gly Ser Leu Trp Ala Lys Glu Ala Trp Gly Asn		175
	180	185
Tyr Trp Ser Trp Asp Pro Lys Glu Thr Trp Ala Val Val Thr Trp Met		190
	195	200
Gly Tyr Leu Leu Tyr Ile His Leu Arg Leu Arg Arg Lys Phe Arg Lys		205

210	215	220
Lys Met Leu Tyr Val	Ile Leu Ile Phe Ser Phe	Leu Ala Leu Gln Met
225	230	235
Cys Trp Tyr Gly Val	Asn Tyr Leu Pro Ser Ala	Gln Gln Ser Val His
245	250	255
Leu Tyr Asn Arg Asn Asn		
260		

<210> 5584
 <211> 1249
 <212> PRT
 <213> B.fragilis

<400> 5584

Ile Asn Glu Thr Val Ser Asn Met Ala Asn Asp Leu Asn Arg Ser Ile		
1	5	10
Lys Leu Tyr Ile Asp Gly Ser Glu Ala Thr Asn Lys Ile Asp Leu Val		
20	25	30
Lys Glu Ser Ile Ser Arg Leu Glu Asp Lys Leu Arg Ser Leu Thr Gly		
35	40	45
Lys Glu Val Asp Tyr Ala Lys Arg Ser Gln Asp Leu Lys Lys Glu Leu		
50	55	60
Asp Ala Lys Asn Arg Thr Leu Gln Asn Tyr Glu Lys Gln Leu Ala Glu		
65	70	75
Thr Glu Arg Val Leu Lys Ser Leu Ser Gly Ala Thr Tyr Asn Glu Leu		
85	90	95
Leu Ala Val Gln Ser Arg Val Arg Lys Glu Leu Arg Asn Ala Val Pro		
100	105	110
Gly Thr Lys Gln Tyr Thr Ala Ala Leu Glu Gln Asn Arg Arg Val Thr		
115	120	125
Glu Ala Leu Ser Arg Ala Gln Ala Asn Met Arg Val Glu Val Gly Ala		
130	135	140
Gln Gly Asn Ile Trp Ser Arg Ala Ser Gly Phe Ile Asn Lys Tyr Ile		
145	150	155
Gly Leu Ile Gly Thr Val Ile Ala Ala Ile Thr Gly Val Ser Met Lys		
165	170	175
Leu Asn Gln Leu Arg Glu Gln Arg Asn Lys Arg Glu Glu Ala Lys Ala		
180	185	190
Asp Val Glu Ala Leu Thr Gly Leu Ser Lys Asp Asp Ile Asn Trp Leu		
195	200	205
Glu Gln Gln Ala Val Gln Leu Ser Thr Thr Met Thr Glu Ser Gly Ile		
210	215	220
Arg Ile Arg Gln Ser Ala Thr Glu Ile Leu Asp Ala Tyr Lys Leu Val		
225	230	235
Gly Ser Ala Lys Pro Glu Phe Leu Asp Asn Lys Glu Ala Leu Ala Glu		
245	250	255
Val Thr Lys Gln Thr Leu Ile Leu Ala Ser Ala Ser Gly Met Thr Leu		
260	265	270
Lys Asp Ala Val Asp Ala Val Thr Leu Ser Leu Asn Gln Tyr Gly Asp		
275	280	285
Gly Ala Asp Gln Ala Ser Arg Tyr Ala Asn Val Met Ala Ala Gly Ser		
290	295	300
Lys Tyr Gly Ala Ala Ala Val Glu Ser Val Thr Ala Val Thr Lys		
305	310	315
Ser Gly Val Ala Ala Ser Ala Glu Ile Pro Ile Glu Gln Leu Val		
325	330	335
Gly Thr Ile Glu Thr Leu Ala Glu Lys Gly Ile Lys Asp Glu Ile Ala		
340	345	350
Gly Thr Gly Leu Lys Lys Phe Phe Leu Thr Leu Gln Thr Gly Ala Asp		

355	360	365
Asp Thr Asn Pro Lys Ile Val Gly Leu Glu Lys Ala Leu Asp Asn Leu		
370	375	380
Gln Lys Lys Gln Leu Ser Ala Ala Gln Ile Lys Lys Gln Phe Gly Glu		
385	390	395
Glu Gly Tyr Asn Val Ala Ser Val Leu Ile Asn Glu Ala Asp Lys Val		
405	410	415
Lys Tyr Tyr Thr Glu Ala Val Thr Gly Thr Ser Val Ala Met Glu Gln		
420	425	430
Ala Ala Thr Lys Ser Glu Thr Ala Ala Ala Lys Leu Ser Gln Ala Lys		
435	440	445
Asn Arg Met Gln Glu Leu Gly Ile Glu Leu Leu Glu Lys Leu Asn Pro		
450	455	460
Ala Leu Ile Ser Ala Ala Asn Gly Ala Val Ser Trp Thr Gly Lys Leu		
465	470	475
Ile Lys Leu Leu Asn Phe Ile Asn Glu Asn Lys Arg Ala Ile Thr Leu		
485	490	495
Leu Thr Ile Ala Leu Ile Ala Tyr Thr Ala Ala Lys Asn Ser Asp Val		
500	505	510
Ile Ile Ser Lys Val Val Thr Phe Trp Asn Asn Asn Ile Ala Lys Ser		
515	520	525
Leu Lys Ala Ile Lys Lys Glu Leu Met Thr Asn Pro Tyr Gly Ile Ile		
530	535	540
Ala Val Val Ala Ala Thr Ala Ile Ala Tyr Leu Ile Asn Leu Lys Lys		
545	550	555
Lys Asn Asp Glu Leu Lys Asp Ser Val Ser Gly Ile Lys Lys Val Asn		
565	570	575
Glu Glu Thr Asn Lys Ser Phe Ile Gln Gln Glu Ser Lys Ile Arg Ala		
580	585	590
Leu Thr Ala Val Ile Asn Asp Asn Gly Ile Ala Leu Gly Val Arg Arg		
595	600	605
Lys Ala Leu Asn Asp Leu Lys Glu Ile Ile Pro Asp Tyr Asn Ala Gln		
610	615	620
Leu Thr Asp Glu Gly Thr Leu Thr Lys Asn Asn Thr Asp Ala Ile Lys		
625	630	635
Asp Tyr Leu Val Gln Leu Glu Lys Gln Ile Lys Leu Lys Ala Ala Gln		
645	650	655
Gln Glu Leu Glu Asn Leu Tyr Ala Gln Lys Arg Thr Leu Glu Lys Asp		
660	665	670
Glu Glu Thr Gln Ser Asp Gln Tyr Trp Lys Ile Arg Gln Thr Asn Thr		
675	680	685
Leu Gln Gly Tyr Asn Arg Asn Ser Leu Thr Ala Lys Ile Ser Arg Leu		
690	695	700
Phe Gly Thr Glu Lys Glu Gly Lys Ala Leu Glu Thr Leu Asn Glu Thr		
705	710	715
Arg Lys Asn Leu Ser Ser Ile Ser Glu Lys Ile Asp Glu Ile Thr Lys		
725	730	735
Glu Ile Gly Glu Ser Ala Leu Ala Ile Glu Glu Val Asn Lys Ala Asn		
740	745	750
Glu Glu Thr Thr Asn Asn Lys Ile Thr Thr Pro Ile Ile Asp Glu Glu		
755	760	765
Lys Ala Lys Ala Leu Leu Lys Lys Lys Leu Glu Glu Glu Ala Lys Leu		
770	775	780
Tyr Ser Gln His Gln Ser Glu Leu Lys Glu Ala Tyr Leu Lys Arg Gln		
785	790	795
Asp Glu Thr Leu Gln Thr Glu Gln Gln Phe Asn Asp Arg Met Glu Thr		
805	810	815
Leu Glu Leu Glu His Gln Gln Arg Ile Ile Asn Ile Ala Gly Ala Lys		
820	825	830

Ser Lys Glu Gly Ile Asp Ala Gln Asn Arg Ile Asn Asp Ile Lys Ile
 835 840 845
 Lys Gln Gln Lys Glu Gln Met Asn Arg Gln Leu Ala Glu Glu Lys Thr
 850 855 860
 Leu Tyr Glu Asn Gln Gln Lys Asp Leu Lys Leu Leu Tyr Val Ser Gly
 865 870 875 880
 Lys Asp Glu Asn Leu Lys Thr Glu Lys Glu Tyr Asn Glu Ala Met Glu
 885 890 895
 His Leu Thr Ile Met His Leu Glu Arg Val Leu Lys Ile Ala Asn Leu
 900 905 910
 Asp Ala Asp Gln Arg Arg Thr Ile Glu Gln Gln Leu Leu Asp Phe Lys
 915 920 925
 Val Lys Cys Leu Gln Asp Glu Glu Lys Glu Arg Lys Lys Leu Glu Asp
 930 935 940
 Ala Ala Gln Lys Lys Lys Asp Glu Leu Ala Arg Lys Glu Lys Gln Arg
 945 950 955 960
 Leu Thr Glu Gln Ala Gln Gln Tyr Arg Gln Tyr Gly Glu Gln Ile Gly
 965 970 975
 Asp Thr Leu Gly Gln Met Ile Ser Gly Gln Glu Asn Ala Leu Gln Asn
 980 985 990
 Phe Ala Asp Thr Met Leu Asp Ile Leu Phe Asp Val Leu Ser Gln Met
 995 1000 1005
 Ile Asp Ile Glu Ile Ala Lys Ala Thr Gly Val Ala Val Gly Ala Val
 1010 1015 1020
 Ala Arg Ser Ala Ala Glu Ala Tyr Ala Met Pro Asp Ser Val Ala Thr
 1025 1030 1035 1040
 Phe Gly Ala Thr Gly Ala Ala Arg Ala Ala Val Leu Ser Gly Leu Ile
 1045 1050 1055
 Met Gly Ala Leu Ala Ala Ala Lys Ser Thr Leu Lys Gly Leu Ile Lys
 1060 1065 1070
 Arg Gly Ser Ser Ser Thr Ser Ala Ile Asp Asn Asn Thr Asp Ser Thr
 1075 1080 1085
 Lys Thr Ala Gln Val Gln Val Lys Gln Trp Ala Ser Gly Arg Tyr Asp
 1090 1095 1100
 Val Ile Gly Glu Asp Asp Gly Arg Thr Tyr Arg Asp Val Pro Tyr Ile
 1105 1110 1115 1120
 Gly Asp Ser Pro Thr Gly Ile Val Arg Arg Thr Ser Leu Ile Ser Glu
 1125 1130 1135
 Ser Gly Ala Glu Leu Ile Ile Asn Ala Glu Asp Leu Ser Arg Leu Gln
 1140 1145 1150
 His His Ile Asn Tyr Pro Ile Val Val Gln Ala Ile Gln Asp Ala Arg
 1155 1160 1165
 Ser Gly Arg Val Pro Gln Arg Ala Glu Gly Asn Tyr Asp Pro Ile Arg
 1170 1175 1180
 Asn Ser Ile Ser Arg Thr Ser Gln Thr Thr Ser Ser Pro Thr Asp Lys
 1185 1190 1195 1200
 Glu Ala Asn Leu Ala Gln Leu Ile Lys Glu Leu His Ala Leu Ile Glu
 1205 1210 1215
 Lys Leu Lys Tyr Leu Lys Ala Tyr Val Val Leu Arg Glu Leu Asn Glu
 1220 1225 1230
 Ala Gln Glu Leu Ala Asp Lys Ser Lys Glu Pro Phe Thr Arg Lys Lys
 1235 1240 1245
 Gln

<210> 5585

<211> 153

<212> PRT

<213> B.fragilis

<400> 5585

Thr Met Glu Thr Leu Thr Ala Leu Gln Trp Ala Lys Lys Gly Phe Ile
 1 5 10 15
 Pro Asn Glu Gly Val Lys Gly Thr Glu Gln Trp Thr Asn Cys Tyr Tyr
 20 25 30
 Ser Ala Lys Ala Val Tyr Phe Lys Asp Ser Glu Val His Glu Asp Lys
 35 40 45
 Asp Ala Ala Lys Ala Ile Leu Ser Ala Lys Arg Lys Glu Tyr Arg Asp
 50 55 60
 Ala Ala Lys Lys Arg Glu Glu Lys Arg Lys Lys Asn Ala Ala Tyr Arg
 65 70 75 80
 Glu Lys Met Lys Thr Arg Trp Gln Trp Leu Gln Glu Gly Arg Ile Pro
 85 90 95
 Asn Asp Asn Ala Arg Trp Lys Val Gly Glu Glu Leu Asn Lys Thr Phe
 100 105 110
 Cys Thr Cys Ala Tyr Gly Ser Asn Tyr Cys Tyr Cys His Glu Arg Tyr
 115 120 125
 Thr His Glu Pro Lys Asn Asp Glu Glu Met Gln Lys Ala Ile Phe Asp
 130 135 140
 Phe His Lys Asn Gly Asn Ser Trp Val
 145 150

<210> 5586

<211> 365

<212> PRT

<213> B.fragilis

<400> 5586

Arg Leu Met Thr Lys Leu Ile Arg Thr Phe His Pro Val Gly His Gly
 1 5 10 15
 Ala Phe Tyr Thr Glu Lys His Val Leu Glu Asp Gln Thr Ile Asn Ile
 20 25 30
 Val Tyr Asp Cys Gly Ser Lys Thr Leu Glu Lys Gln Leu Pro Ser Ile
 35 40 45
 Ile Asn Asn Thr Phe Lys Lys Gly Glu Glu Ile Glu Phe Leu Phe Ile
 50 55 60
 Ser His Phe Asp Ala Asp His Val Asn Gly Ile Glu Tyr Leu Lys Thr
 65 70 75 80
 Tyr Cys Lys Ile Lys Lys Val Val Ile Pro Leu Ile Glu Asp Lys Asp
 85 90 95
 Ala Ile Leu Ile Ile Lys Ala Ile Asn Thr Ser Lys Ile Gly Ser Asn
 100 105 110
 Lys Leu Asp Thr Leu Ile Asp Ser Pro Glu Glu Tyr Phe Pro Gly Ser
 115 120 125
 Glu Ile Ile Lys Val Lys Ala Val Asn Glu Gly Tyr Asp Asp Asp Arg
 130 135 140
 Tyr Phe Ala Asn Asp Leu Asn Asn Gly Gly Thr Ile Pro Ser Gly Ser
 145 150 155 160
 Glu Ile Ile Leu His Lys Ser Ser Ala Glu Asn Lys Trp Cys Phe Ile
 165 170 175
 Pro Phe Asn Tyr Asn Tyr Thr Glu Arg Val Asn Leu Phe Lys Asp Lys
 180 185 190
 Ile Lys Glu Lys Gly Leu Ile Phe Asn Lys Leu Asn Asn Ile Asp Tyr
 195 200 205
 Val Gln Ile Ser Gln Lys Thr Ile Lys Ser Ile Tyr Lys Ala Ile Lys
 210 215 220
 Gly Lys Ala Asn Gly Asn Ser Leu Val Val Phe Ser Gly Gly Asp Tyr
 225 230 235 240

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Ala Ile Ser Ala Thr His Tyr Phe Ser Thr Asp Lys Lys Ile Val Leu
 245 250 255
 Glu Tyr Asp Arg Cys Ser Tyr Ile Ser Cys Ile Tyr Leu Gly Asp Ser
 260 265 270
 Phe Ala Asn Lys Ser Asp Phe Tyr Ser Gln Leu Lys Gly Arg Leu Asp
 275 280 285
 Lys Leu Thr Glu Ser Ile Gly Ile Ile Gln Ile Ala His His Gly Ala
 290 295 300
 Lys Gly Asn Phe Ser Pro Asn Ile Leu Lys Leu Gly Thr Asn Pro Leu
 305 310 315 320
 Ala Ile Ile Ser Cys Lys Ser Thr Asp Lys His His Pro Ser Val Asn
 325 330 335
 Val Val Lys Gln Ile Gln Glu Asn Gly Ser Ile Pro Phe Ile Val Thr
 340 345 350
 Glu Lys Pro Thr Thr Glu Val Glu Gln Ile Gly Tyr Tyr
 355 360 365

<210> 5587

<211> 116

<212> PRT

<213> B.fragilis

<400> 5587

Leu Phe Tyr Phe Thr Leu Phe Ser Thr Glu Ser Val Glu Ser Arg Ser
 1 5 10 15
 Asn Leu Lys Leu Leu Leu Phe Leu Asn Leu Phe Ile Asn Phe Tyr Phe
 20 25 30
 Phe Tyr Phe Met Asn Met Tyr Ile Gly Asn Leu Ser Tyr Arg Val Lys
 35 40 45
 Glu Ala Asp Leu Arg Gln Val Met Glu Glu Tyr Gly Thr Val Asp Ser
 50 55 60
 Val Lys Leu Ile Ile Asp Arg Glu Thr Arg Lys Ser Lys Gly Phe Ala
 65 70 75 80
 Phe Val Glu Met Pro Asn Asp Asp Glu Ala Lys Asn Val Ile Ser Glu
 85 90 95
 Leu Asn Gly Ala Glu Tyr Glu Gly Arg Gln Met Val Val Lys Glu Ala
 100 105 110
 Leu Pro Arg Asn
 115

<210> 5588

<211> 432

<212> PRT

<213> B.fragilis

<400> 5588

Lys Asn Ile Ala Lys Val Ser Phe Ile Phe Ile Thr Gly Gln Leu Ser
 1 5 10 15
 Tyr Asn Phe Ile Pro Leu His Phe Ile Thr Thr Ile Lys Ser Met Arg
 20 25 30
 Lys Phe Ile Ile Ser Phe Cys Cys Tyr Val Phe Phe Ile Phe Thr Leu
 35 40 45
 Ala Ala Gln Asp Lys Ala Pro His Tyr Thr Val Ile Val Ser Leu Asp
 50 55 60
 Ala Phe Arg Trp Asp Tyr Pro Ala Met Tyr Asp Thr Pro Asn Leu Asn
 65 70 75 80
 Gln Met Ala Arg Glu Gly Val Lys Ala Thr Met Leu Pro Ser Tyr Pro
 85 90 95
 Ala Ser Thr Phe Pro Asn His Tyr Thr Leu Ala Thr Gly Leu Val Pro

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      100              105              110
Asp His Asn Gly Ile Ile Asn Asn Thr Phe Trp Asp Val Lys Arg Arg
      115              120              125
Arg Gln Tyr Ser Met Gly Asp Pro Ala Thr Arg Asn Asn Pro Asp Tyr
      130              135              140
Tyr Leu Gly Glu Pro Ile Trp Ile Thr Ala Gln Lys Gln Gly Val Lys
      145              150              155              160
Thr Gly Asn Val Tyr Trp Val Gly Ser Asp Ile Ala Ile Lys Gly Gly
      165              170              175
Tyr Pro Thr Tyr Tyr Arg Glu Tyr Ala Glu Lys Pro Arg Leu Thr Phe
      180              185              190
Glu Gln Arg Val Asp Ser Thr Ile Ala Leu Leu Glu Lys Pro Glu Ala
      195              200              205
Glu Arg Pro Arg Leu Val Met Leu Tyr Phe Glu Glu Pro Asp Gly Val
      210              215              220
Thr His His His Gly Pro Arg Ser Val Glu Ala Ala Ala Ile Ile His
      225              230              235              240
Arg Met Asp Ser Leu Val Gly Met Leu Arg Gln Gly Ile Ala Ser Leu
      245              250              255
Pro Phe Gly Lys Asp Val Asn Leu Ile Val Thr Ala Asp His Gly Met
      260              265              270
Thr Glu Ile Ser Asp Asp Arg Val Val Asp Met Asn Lys Tyr Leu Arg
      275              280              285
Pro Glu Trp Cys Glu Ala Val Asp Gly Arg Thr Pro Thr Ser Ile Phe
      290              295              300
Thr Lys Pro Glu Tyr Arg Asp Ser Val Tyr Asn Ala Leu Lys Asp Val
      305              310              315              320
Pro His Ile His Val Trp Lys Lys Glu Glu Ile Pro Val Glu Leu Asn
      325              330              335
Tyr Gly Ser Ser Asp Arg Ile Gly Asp Ile Val Val Ala Pro Glu Leu
      340              345              350
Gly Trp Gln Phe Thr Asp Val Pro Arg Ala Leu Lys Gly Ala His Gly
      355              360              365
Tyr Phe Pro Gln Ser Pro Asp Met Gln Val Met Phe Arg Ala Cys Gly
      370              375              380
Pro Asp Phe Lys Ala Gly Tyr Glu Ser Lys Gly Phe Val Asn Val Asp
      385              390              395              400
Ile Tyr Pro Leu Leu Ala His Leu Leu Lys Ile Thr Pro Glu Lys Thr
      405              410              415
Asp Gly Gln Phe Glu Arg Ile Lys Asp Ile Leu Lys Asp Val Ser Phe
      420              425              430

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<210> 5589

<211> 322

<212> PRT

<213> B.fragilis

<400> 5589

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Tyr Ile Tyr Phe Met Thr Arg Asn Glu Gln Leu Glu Lys Trp Leu Ser
1              5              10              15
Asn Arg Gln Arg Arg Tyr Ala Asp Gly Met Glu Leu Phe Asn Ala Leu
      20              25              30
Ala Lys Ala Asn Thr Lys Ser Ser Tyr Gly Asn Tyr Leu Ser Gln Ala
      35              40              45
Pro Glu Asn Pro His Ile Phe Asp Pro His Phe Thr Gln Leu Val Asn
      50              55              60
Ile Leu Thr Lys Ile Ala Arg Glu Ile Lys Asp Ala Pro Ser Val Tyr
      65              70              75              80
Pro Ala Ala Phe Glu Glu Ile Leu Ile Val Gln Thr Leu Asn Asp Glu

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<210> 5590
<211> 63
<212> PRT
<213> B.fragilis
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<210> 5591
<211> 574
<212> PRT
<213> B.fragilis
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<400> 5591															
Gly	Met	Thr	Ala	Gln	Ala	Ser	Pro	Ile	Pro	Ser	Ala	Tyr	Glu	Leu	Arg
1				5					10					15	
Met	Lys	Gln	Ala	Asn	Val	Ile	Arg	Lys	Phe	Phe	Asn	Lys	Met	Gln	Arg
			20					25					30		
Gln	Ala	Met	Ala	Ile	Ala	Ala	His	Asp	Glu	Tyr	Ile	Val	Ala	Ser	Arg
		35					40					45			

Gly	Thr	Gly	Lys	Ser	Glu	Gly	Ile	Asp	Ala	Arg	Phe	Ile	Leu	Arg	Asn
50						55					60				
Val	Trp	Glu	Met	Pro	Gly	Ser	Leu	Gly	Gly	Met	Ile	Ser	Pro	Ser	Tyr
65					70					75					80
Ala	Lys	Ala	Trp	Gly	Asn	Thr	Leu	Pro	Ala	Ile	Cys	Lys	Ala	Leu	Ala
				85					90					95	
Glu	Trp	Gly	Tyr	Ile	Gln	Asn	Ile	His	Tyr	Val	Val	Gly	His	Lys	Ala
			100					105					110		
Pro	Pro	Ser	Met	Gly	Phe	Ala	Lys	Pro	Val	Arg	Pro	Val	Leu	Gly	Asp
		115					120					125			
Gly	Trp	Ser	Asn	Ala	Phe	His	Phe	Trp	Asn	Gly	Thr	Val	Met	Val	Ile
	130					135					140				
Leu	Ser	Phe	Asn	Gln	Gly	Met	Ser	Ala	Asn	Ser	Met	Ser	Leu	Asp	Trp
145					150					155					160
Val	Ile	Gly	Pro	Glu	Ala	Lys	Phe	Leu	Ser	Tyr	Asp	Lys	Ile	Lys	Asn
				165					170					175	
Glu	Val	Asn	Pro	Ala	Asn	Arg	Gly	Asn	Arg	Gln	Tyr	Phe	Gly	His	Cys
			180					185					190		
Pro	His	His	His	Ser	Val	Cys	Tyr	Ser	Thr	Asp	Met	Pro	Gly	Ser	Ser
	195						200					205			
Met	Gly	Arg	Trp	Ile	Leu	Asp	Lys	Gln	Glu	Glu	Met	Gln	Pro	Pro	His
210						215					220				
Ile	Gln	Leu	Ile	Arg	Asn	Leu	Tyr	Lys	Glu	Leu	Gln	Asp	Tyr	Lys	Arg
225					230					235					240
Lys	Pro	Leu	Thr	Glu	His	Thr	Met	Arg	Met	Ile	Arg	Glu	Leu	Gln	Arg
				245					250					255	
Asp	Leu	Asp	Ile	Ala	Arg	Lys	Phe	Gln	Pro	Ala	Leu	Lys	Pro	Asn	Asp
			260					265					270		
Lys	Lys	Lys	Arg	Glu	Tyr	Thr	Val	Phe	Tyr	Gly	Glu	Tyr	Asp	Val	Phe
		275					280					285			
Asp	Asn	Leu	Glu	Val	Leu	Gly	Glu	Asp	Phe	Ile	Trp	Gln	Met	Gln	Arg
290						295					300				
Asp	Ser	Pro	Pro	Leu	Val	Trp	Arg	Thr	Ala	Phe	Leu	Asn	Glu	Arg	Leu
305					310					315					320
Met	Lys	Val	Pro	Asn	Gly	Phe	Tyr	Ser	Ala	Leu	Asp	Asp	Arg	Ile	His
				325					330					335	
Phe	Tyr	Gln	Pro	Ala	Asp	Asn	Gly	Arg	Leu	Lys	Asn	Leu	Gly	Ser	Asn
		340					345						350		
Trp	Lys	Gln	Leu	Ser	Ser	Cys	Gly	Cys	Leu	Gly	Asp	Gly	Asp	Leu	Asp
	355						360					365			
Phe	Asp	Lys	Glu	Leu	His	Ile	Ala	Phe	Asp	Ser	Asn	Ala	Ser	Ile	Ser
370						375					380				
Thr	Ala	Val	Val	Ala	Gln	Leu	Asp	Gly	Asn	Thr	Met	Lys	Ile	Ile	Lys
385					390					395					400
Ser	Phe	Tyr	Val	Lys	Thr	Pro	Ser	Lys	Leu	Gly	Asp	Leu	Val	Gln	Gln
				405					410					415	
Ile	Ala	Asp	Tyr	Tyr	Arg	Pro	Lys	Leu	Asn	His	Asp	Val	Val	Val	Tyr
			420					425					430		
Tyr	Asp	His	Thr	Phe	Thr	Trp	Glu	Ser	Gly	Ser	Thr	Thr	Glu	Thr	Tyr
		435					440					445			
Ala	Asp	Ile	Ile	Glu	Arg	Val	Phe	Lys	Glu	Asn	Arg	Tyr	Thr	Pro	Ala
450						455					460				
Met	Val	Tyr	Val	Gly	Gln	Ala	Pro	Lys	His	Glu	Trp	Lys	His	Leu	Asn
465					470					475					480
Ile	Asp	Leu	Ala	Leu	Lys	Gly	Asp	Pro	Gln	Phe	Leu	Trp	Ile	Arg	Phe
				485					490					495	
Asn	Leu	Tyr	Gln	Asn	Glu	Phe	Leu	Lys	Ile	Ala	Met	Glu	Gln	Thr	Gly
			500					505					510		
Ile	Lys	Gln	Gly	Lys	Asn	Gly	Phe	Glu	Lys	Asp	Lys	Ala	Pro	Glu	Gly

515	520	525
Thr Asp Thr Pro Asp Asn Pro Asp Gln Tyr Lys Thr His Val Thr		
530	535	540
Asp Ala Phe Asp Thr Leu Trp Leu Gly Met Asn Phe Tyr Phe Thr Arg		
545	550	555
Pro Gly Thr Gly Thr Gly Gly Ile Phe Phe Leu Asn Arg Lys		
565	570	

<210> 5592

<211> 1018

<212> PRT

<213> B.fragilis

<400> 5592

Thr Met Tyr Phe Asn Asp Asp Glu Ile Arg Arg Ile Lys Asp Ala Ala		
1	5	10
Thr Gly His Leu Leu Asp Val Ala Gln Asp Phe His Glu Leu Lys Arg		
20	25	30
Ser Gly Val Asn Tyr Asn Cys Asp Cys Pro Arg Cys Lys Ala Ala Lys		
35	40	45
Lys Leu Ser Ile Ser Pro Ala Lys Gln Ile Phe Lys Cys Phe Gly Cys		
50	55	60
Asn Glu Leu Lys Gly Gly Asp Ser Val Ser Phe Leu Met Ser Ala Glu		
65	70	75
Gly Met Thr Phe Asn Asp Ala Leu Glu Tyr Leu Ala Lys Lys Phe Asn		
85	90	95
Val Ile Leu Asp Gln Arg Pro Ala Ile Lys Lys Gln Pro Ala Lys Lys		
100	105	110
Met Lys Lys Ser Ser Lys Ala Ala Lys Gly Ile Asp Val Asp Ser Tyr		
115	120	125
Cys Ala Arg Met Leu Ala Glu Ser Gly Leu Thr Phe Glu Asp Val Thr		
130	135	140
Ala Lys Val Tyr Lys Thr Gly Asp Thr Gln Ser Ile Phe Glu Gln Arg		
145	150	155
Thr Phe Arg Pro Gly Thr Ile Asp Glu Arg Gly Met Leu Thr Thr Lys		
165	170	175
Gly Asp Asp Val Ile Ile Glu Tyr Tyr Asp Leu Glu Gly Met Pro Val		
180	185	190
Val Phe Thr Arg Lys Asp Asn Lys Arg Arg Asp Val Gly Thr Pro Gln		
195	200	205
Glu Tyr Tyr Arg Ile Arg Trp Gln Phe Pro Asp Ala His Leu Asp Lys		
210	215	220
Glu Gly Lys Pro Tyr Lys Tyr Lys Ser Pro Arg Gly Ser Gly Thr Pro		
225	230	235
Ile Tyr Ile Pro Glu Arg Ile Arg Ser Leu Tyr Lys Ser Lys Thr Lys		
245	250	255
Ile Pro Arg Leu Tyr Ile Gln Glu Gly Glu Lys Lys Ala Glu Lys Ala		
260	265	270
Cys Lys His Gly Ile Pro Ser Ile Ala Val Ser Gly Ile Gln Asn Leu		
275	280	285
Gly Leu Tyr Gly Ala Leu Pro Glu Asp Leu Val Lys Ile Ile Ser Thr		
290	295	300
Cys Glu Val Gln Glu Val Ala Phe Ile Phe Asp Ser Asp Trp Asp Asp		
305	310	315
Ile Ser Ser Asn Ile Arg Ile Asn Asp Gln Val Glu Lys Arg Pro Arg		
325	330	335
Cys Phe Phe Tyr Ala Ala Lys Asn Phe Lys Glu Tyr Met Arg Ser Leu		
340	345	350
Lys Asn Arg Asn Ile Phe Val Glu Ile Phe Val Gly His Ile Asn Lys		

355	360	365
Asn Glu Ala Gly Asp Lys Gly Leu Asp Asp Leu Leu Ala Asn Ser Leu		
370	375	380
Arg Gly Lys Glu Glu Glu Leu Ala Ala Asp Ile Glu Phe Ala Cys Asn		
385	390	395
Glu Lys Lys Gly Leu Gly Lys Tyr Ile Glu Met Phe Lys Val Thr Thr		
405	410	415
Trp Thr Asp His Lys Leu Gln Glu Leu Trp Gly Leu His Ser His Glu		
420	425	430
Val Phe Ala Glu Arg His Ala Asp Leu Leu Arg Asn Leu Pro Glu Phe		
435	440	445
Leu Phe Gly Arg Tyr Arg Trp Lys Phe Asp Glu His Gly Lys Val Ile		
450	455	460
Leu Ala Gln Pro Phe Asp Asp Asp Glu Lys Phe Trp Arg Glu Val Thr		
465	470	475
Lys Tyr Asp Arg Ser Gln Asn Glu Arg Ile Glu Tyr Glu Phe Cys Tyr		
485	490	495
Val Asn Ser Gln Asn Phe Leu Gln Asn Arg Gly Phe Gly Arg Leu Arg		
500	505	510
Arg Ile Asp Lys Ser Tyr Gln Phe Ile His Leu Glu Pro Pro Val Val		
515	520	525
Arg Ala Ile Asp Ala Ser Asp Ala Arg Asp Tyr Leu Phe Gln Phe Ala		
530	535	540
Lys His Asn Cys Lys Thr Glu Val Asn Glu Met Leu Ile Lys Gly Val		
545	550	555
Ser Gln Tyr Val Gly Pro Asp Lys Leu Ser Leu Leu Glu Phe Ile Gln		
565	570	575
Pro Asn Phe Val Lys Pro Asn Arg Glu Ser Gln Tyr Phe Tyr Phe Asp		
580	585	590
Lys Asn Cys Trp Leu Val Thr Lys Asp Ser Val Ser Glu Leu Gly Tyr		
595	600	605
Glu Asn Ile Thr His His Ile Trp Glu Glu Gln Arg Lys Met Thr Pro		
610	615	620
Ala Lys Tyr Leu Gly Lys Pro Leu Val Thr Phe Ser Arg Gln Asp Asn		
625	630	635
Thr Phe Thr Tyr Glu Leu Ser Glu Ala Gly Lys Lys Ser His Tyr Leu		
645	650	655
Gln Phe Leu Ile Asn Thr Ser Asn Phe Thr Trp Arg Lys Ser Ala Glu		
660	665	670
Glu Ile Glu Pro Glu Glu Glu Asn Glu Asn Arg Ile His Leu Leu Ser		
675	680	685
Lys Leu Cys Ala Ile Gly Tyr Met Val Met Glu Ala Lys Asp Asn Asn		
690	695	700
Val Ala Arg Ala Val Ile Gly Met Asp Gly Lys Gln Ser Glu Val Gly		
705	710	715
Glu Ser Asn Gly Arg Ser Gly Lys Ser Leu Val Gly Glu Leu Met Arg		
725	730	735
Asn Ile Ile Pro Thr Ala Tyr Ile Pro Gly Lys Arg Ser Asp Leu Phe		
740	745	750
Asn Asp Gln Phe Val Trp Asn Asp Ile Gln Glu Asn Thr Lys Leu Val		
755	760	765
Phe Ile Asp Asp Val Leu Gln Asn Phe Asn Phe Glu Phe Leu Phe Pro		
770	775	780
Asn Ile Thr Gly Asp Trp Ser Val Asn Tyr Lys Gly Gly Arg Arg Ile		
785	790	795
Thr Leu Pro Phe Ala Arg Ser Pro Lys Met Tyr Ile Ala Thr Asn His		
805	810	815
Ala Ile Arg Gly Ser Gly Ser Ser Tyr Thr Asp Arg Gln Trp Leu Leu		
820	825	830

Ala Phe Ser Asp Phe Tyr Asn Asp Thr His Lys Pro Val Asp Asp Phe
835 840 845
Gly Val Leu Phe Phe Ser Glu Trp Asp Phe Glu Gln Trp Asn Leu Thr
850 855 860
Trp Asn Leu Leu Ala Asn Cys Val Gln Leu Tyr Leu Thr Tyr Gly Val
865 870 875 880
Val Gln Ala Pro Gly Glu Arg Leu Glu Gln Arg Lys Leu Arg Gln Glu
885 890 895
Met Gly Glu Thr Leu Ile Ser Trp Ala Asp Glu Tyr Phe Ser Gly Glu
900 905 910
Glu His Leu Asn Val Arg Leu Pro Arg Lys Asp Leu Tyr Asp Ala Phe
915 920 925
Cys Gln Tyr Asp Asn Gln Gln Arg Lys Phe Val Ser Pro Thr Ala Phe
930 935 940
Lys Lys Lys Phe Ile Met Tyr Cys Ser Trp Lys Gly Tyr Val Phe Asn
945 950 955 960
Pro His Lys Tyr Asp Ser Ile Thr Gly Lys Pro Phe Gln Val Asp Lys
965 970 975
Asp Gly Lys Ala Val Val Asp Asp Lys Ser Gly Gly Val Glu Tyr Phe
980 985 990
Thr Val Gly Thr Gly Ala Gln Pro Ile Pro Lys Glu Asp Asn Ser Arg
995 1000 1005
Leu Pro Gln Pro Thr Gly Lys Leu Val Phe
1010 1015

<210> 5593

<211> 279

<212> PRT

<213> B.fragilis

<400> 5593

Lys Leu Pro Ala Ile Cys Ile Lys Lys Lys Arg Ile Met Lys Ile Arg
1 5 10 15
Phe Ile Ser Leu Ala Ser Gly Ser Ser Gly Asn Cys Tyr Tyr Leu Gly
20 25 30
Thr Glu Lys Tyr Gly Ile Leu Ile Asp Ala Gly Ile Gly Ile Arg Thr
35 40 45
Ile Lys Lys Ser Leu Lys Asp Ile Asn Val Thr Met Asp Ser Ile Arg
50 55 60
Ala Val Phe Ile Thr His Asp His Ala Asp His Ile Lys Ala Val Gly
65 70 75 80
His Leu Gly Glu Lys Leu Asn Ile Pro Val Tyr Thr Thr Ala Arg Val
85 90 95
His Ala Gly Ile Asn Lys Ser Tyr Cys Met Thr Glu Lys Leu His Gly
100 105 110
Ser Val Arg Tyr Leu Glu Lys Glu Glu Pro Met Gln Leu Glu Asp Phe
115 120 125
Arg Ile Glu Ser Phe Glu Val Pro His Asp Gly Thr Asp Asn Val Gly
130 135 140
Tyr Cys Ile Glu Ile Asp Gly Lys Val Phe Ser Phe Leu Thr Asp Leu
145 150 155 160
Gly Glu Ile Thr Pro Thr Ala Ala Arg Tyr Ile Cys Lys Ala His Tyr
165 170 175
Leu Ile Ile Glu Ala Asn Tyr Asp Glu Glu Met Leu Arg Met Gly Pro
180 185 190
Tyr Pro Thr Tyr Leu Lys Glu Arg Ile Ser Ser Lys Thr Gly His Met
195 200 205
Ser Asn Ile Asp Thr Ala Asn Phe Leu Ala Glu Asn Ile Met Glu His
210 215 220

Leu Arg Tyr Ile Trp Leu Cys His Leu Ser Lys Asp Asn Asn His Pro
 225 230 235 240
 Glu Leu Ala Tyr Lys Thr Val Glu Trp Lys Leu Lys Ser Lys Gly Ile
 245 250 255
 Ile Val Gly Lys Asp Val Gln Leu Leu Ala Leu Lys Arg Asn Thr Pro
 260 265 270
 Ser Glu Leu Tyr Glu Phe Glu
 275

<210> 5594
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 5594
 Cys Lys Glu Ala Tyr Gln Cys Lys Ile Ile Glu Ala Gly Phe Asp Ser
 1 5 10 15
 Arg Lys Pro Thr Leu Ile Leu Ile Ile Met Lys Thr Val His Ser Ser
 20 25 30
 Pro Ser Leu Ser Pro Ser Gly Thr Lys Arg Gln Lys Ala Asn Leu Phe
 35 40 45
 Thr Asn Glu Asn Pro Glu Thr Ile Ala Gln Met Arg Met Gln Ser Ala
 50 55 60
 Gln Lys Glu Gln His Lys Val Met Val Arg Leu Asp Asn Arg Thr His
 65 70 75 80
 Val Leu Val Ala Pro Gln Asn Val Thr Pro Glu Tyr Ile Glu Met Leu
 85 90 95
 Arg Lys Lys Tyr Gln Ile Thr Tyr Asn Ala Pro Ala Arg Gly Gly Arg
 100 105 110
 Arg

<210> 5595
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 5595
 Ile Arg His Phe Val His Val Leu Thr Glu Val Thr Ile Val Ile Ala
 1 5 10 15
 Met Arg Asp Ile Pro Met Asn Leu Lys Met Met Lys Arg Cys Lys Lys
 20 25 30
 Leu Phe Leu Ile Phe Ile Arg Thr Glu Ile Ala Gly Tyr Asp Tyr Lys
 35 40 45
 Gln Asp Gln Lys Gly Ser Asn Met Lys Leu Arg Lys Lys Glu Leu Lys
 50 55 60
 Tyr Gly Ile Arg Asn Tyr Lys Asn Arg
 65 70

<210> 5596
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 5596
 Ser Val Asn Phe Ala His Met Ile Glu Leu Ala Gln His Ile Glu Val
 1 5 10 15
 Leu Leu Leu Glu Asn Asp Cys Val Ile Val Pro Gly Phe Gly Gly Phe
 20 25 30

Ile Ala His Tyr Ala Pro Ala Met Arg Val Ala Glu Glu Asn Leu Phe
 35 40 45
 Leu Pro Pro Thr Arg Thr Ile Gly Phe Asn Pro Gln Leu Thr Leu Asn
 50 55 60
 Asp Gly Val Leu Val Gln Ser Tyr Met Ala Val Tyr Asp Thr Asn Phe
 65 70 75 80
 Ser Asp Ala Thr Lys Met Val Glu Lys Glu Val Ala Glu Leu Ile Ser
 85 90 95
 Ala Leu His Glu Asp Gly Lys Thr Asp Leu Pro Asn Ile Gly Glu Ile
 100 105 110
 Arg Tyr Thr Ile His Asn Thr Tyr Glu Phe Val Pro Tyr Asp Asn Lys
 115 120 125
 Ile Thr Thr Pro Tyr Leu Tyr Gly Leu Asp Ser Phe Glu Met Lys Glu
 130 135 140
 Leu Ser Ala Leu Arg Arg Pro Glu Lys Glu Gln Ile Leu Pro Thr Val
 145 150 155 160
 Leu Lys Lys Lys Thr Ser Tyr Glu Phe Arg Ala Asn Trp Ala Phe Leu
 165 170 175
 Arg Asn Ala Val Ala Met Ile Ala Ala Val Ala Leu Phe Phe Phe Met
 180 185 190
 Ser Thr Pro Val Glu Asn Thr Tyr Ile Glu Lys Gly Asn Tyr Ala Arg
 195 200 205
 Leu Leu Pro Thr Asp Leu Phe Glu Lys Ile Glu Lys Gln Ser Val Ala
 210 215 220
 Met Thr Pro Val Met Leu Lys Ser Val Asp Ala Ile Pro Gln Thr Lys
 225 230 235 240
 Pro Ala Thr Ala Lys Lys Lys Ser Ser Thr Val Arg Lys Ala Ser Val
 245 250 255
 Val Lys Pro Val Ala Val Lys Glu Val Lys Val Asn Gln Pro Glu Lys
 260 265 270
 Thr Met Lys Ala Thr Glu Thr Lys Val Val Glu Lys Thr Phe Pro Tyr
 275 280 285
 His Ile Ile Ile Ala Ser Val Ala Asn Thr Lys Asp Ala Glu Ala Met
 290 295 300
 Ala Gly Glu Leu Lys Ala Lys Gly Tyr Thr Gly Ala Arg Val Leu Thr
 305 310 315 320
 Gly Asp Gly Lys Ile Arg Val Ser Ile Met Ser Cys Ala Asp Arg Glu
 325 330 335
 Asp Ala Asn Arg Gln Leu Leu Lys Leu Arg Glu Asn Glu Ala Tyr Lys
 340 345 350
 Asn Ala Trp Met Leu Ala Lys
 355

<210> 5597

<211> 674

<212> PRT

<213> B.fragilis

<400> 5597

Tyr Ile Leu Phe Met Glu Lys Thr Leu Asn Leu Ile Lys Asn Asp Pro
 1 5 10 15
 Trp Leu Glu Pro Tyr Lys Asp Ala Ile Val Gly Arg Phe Glu His Ala
 20 25 30
 Met Asp Lys Lys Ala Glu Leu Thr Asn Gly Gly Lys Ser Thr Leu Ser
 35 40 45
 Asp Phe Ala Ser Gly Tyr Leu Tyr Phe Gly Leu His His Thr Asp Lys
 50 55 60
 Gly Trp Ile Phe Arg Glu Trp Ala Pro Asn Ala Ser His Ile Tyr Met
 65 70 75 80

Val	Gly	Thr	Phe	Ser	Asn	Trp	Glu	Glu	Lys	Pro	Ala	Tyr	Lys	Leu	Lys
				85					90					95	
Arg	Leu	Lys	Asn	Gly	Ser	Trp	Glu	Ile	Lys	Leu	Pro	Ile	Asp	Ala	Ile
			100					105					110		
Gln	His	Gly	Asp	Leu	Tyr	Lys	Leu	His	Val	Tyr	Trp	Glu	Gly	Gly	Gln
		115					120					125			
Gly	Glu	Arg	Ile	Pro	Ala	Trp	Ala	Asn	Arg	Val	Val	Gln	Asp	Asp	Asn
	130					135				140					
Thr	Lys	Ile	Phe	Ser	Ala	Gln	Val	Trp	Ala	Pro	Glu	Lys	Pro	Phe	Lys
145				150					155					160	
Phe	Lys	Lys	Lys	Thr	Phe	Lys	Pro	Ser	Thr	Asp	Pro	Leu	Leu	Ile	Tyr
				165					170					175	
Glu	Cys	His	Ile	Gly	Met	Ala	Gln	Gln	Glu	Glu	Lys	Val	Gly	Thr	Tyr
			180					185					190		
Asn	Glu	Phe	Arg	Glu	Lys	Ile	Leu	Pro	Arg	Ile	Ala	Lys	Glu	Gly	Tyr
		195					200					205			
Asn	Cys	Ile	Gln	Ile	Met	Ala	Ile	Gln	Glu	His	Pro	Tyr	Tyr	Gly	Ser
	210					215					220				
Phe	Gly	Tyr	His	Val	Ser	Ser	Phe	Phe	Ala	Ala	Ser	Ser	Arg	Phe	Gly
225				230					235					240	
Thr	Pro	Glu	Glu	Leu	Lys	Gln	Leu	Ile	Asp	Thr	Ala	His	Gly	Leu	Gly
				245					250					255	
Ile	Ala	Val	Ile	Met	Asp	Ile	Val	His	Ser	His	Ala	Val	Lys	Asn	Glu
			260					265					270		
Val	Glu	Gly	Leu	Gly	Asn	Phe	Ala	Gly	Asp	Pro	Asn	Gln	Tyr	Phe	Tyr
		275					280					285			
Pro	Gly	Gly	Arg	Arg	Glu	His	Pro	Ala	Trp	Asp	Ser	Leu	Cys	Phe	Asp
	290				295					300					
Tyr	Gly	Lys	Asn	Glu	Val	Met	His	Phe	Leu	Leu	Ser	Asn	Cys	Lys	Tyr
305				310					315					320	
Trp	Leu	Glu	Glu	Tyr	His	Phe	Asp	Gly	Phe	Arg	Phe	Asp	Gly	Val	Thr
				325					330					335	
Ser	Met	Leu	Tyr	Tyr	Ser	His	Gly	Leu	Gly	Glu	Ala	Phe	Cys	Asn	Tyr
			340					345					350		
Gly	Asp	Tyr	Phe	Asn	Gly	His	Gln	Asp	Asp	Asn	Ala	Ile	Cys	Tyr	Leu
		355					360					365			
Thr	Leu	Ala	Asn	Glu	Leu	Ile	His	Glu	Val	Asn	Pro	Lys	Ala	Ile	Thr
	370					375					380				
Ile	Ala	Glu	Glu	Val	Ser	Gly	Met	Pro	Gly	Leu	Ala	Ala	Lys	Val	Glu
385				390					395					400	
Asp	Gly	Gly	Tyr	Gly	Phe	Asp	Tyr	Arg	Met	Ala	Met	Asn	Ile	Pro	Asp
				405					410					415	
Tyr	Trp	Ile	Lys	Thr	Ile	Lys	Glu	Lys	Ile	Asp	Glu	Asp	Trp	Lys	Pro
			420					425					430		
Ser	Ser	Met	Phe	Tr											

545		550		555		560									
Met	Leu	Lys	Val	Ile	Lys	Ser	Val	Lys	Asn	Ile	Gln	Gln	Thr	Pro	Val
		565						570						575	
Gln	Glu	Ile	Trp	His	Asn	Asp	Gly	Asp	Gln	Val	Leu	Ala	Tyr	Gln	Arg
		580						585						590	
Lys	Asp	Leu	Val	Phe	Val	Phe	Asn	Phe	Asn	Pro	Ser	Gln	Ser	Phe	Thr
		595						600						605	
Asp	Tyr	Gly	Phe	Leu	Val	Thr	Pro	Gly	Thr	Tyr	Glu	Val	Val	Leu	Asn
		610						615						620	
Thr	Asp	Asn	Ile	Ile	Tyr	Gly	Gly	Asn	Gly	Leu	Ser	Asp	Asp	Ser	Val
		625						630						635	
Lys	His	Phe	Thr	Leu	Pro	Asp	Pro	Leu	Tyr	Lys	Lys	Glu	Lys	Lys	Glu
				645						650					655
Trp	Leu	Lys	Leu	Tyr	Ile	Pro	Ala	Arg	Thr	Ala	Met	Val	Leu	Arg	Arg
				660						665					670
Thr	Lys														

<210> 5598
 <211> 381
 <212> PRT
 <213> B.fragilis

<400> 5598

Arg	Met	Asn	Leu	Tyr	Leu	Lys	His	Thr	Leu	Phe	Tyr	Leu	Leu	Gly	Ile
1			5						10					15	
Ser	Tyr	Ala	Leu	Ile	Ser	Ser	Ala	Gln	Ser	Asn	Pro	Asp	Lys	Leu	Gln
			20					25					30		
Cys	Lys	Val	Thr	Gly	Arg	Met	Leu	Leu	Asp	Gly	Gly	Val	Tyr	Leu	Lys
			35				40					45			
Asn	Asp	Asn	Asn	Phe	Gly	Asn	Gly	Val	Glu	Phe	Ser	Asp	Leu	Arg	Ile
			50			55					60				
Gly	Ala	Lys	Val	Ala	Tyr	Gln	Asn	Trp	Asp	Met	Lys	Leu	Glu	Ile	Gly
					70					75					80
Tyr	Thr	Gly	Asn	Lys	Ala	Thr	Ile	Lys	Asp	Ala	Phe	Ala	Lys	Tyr	Thr
			85						90					95	
Tyr	Lys	Asn	His	Ser	Ile	Gln	Val	Gly	Gln	Phe	Tyr	Glu	Pro	Phe	Ser
			100					105					110		
Leu	Glu	Met	Met	Cys	Ser	Thr	Phe	Asp	Ile	Arg	Phe	Asn	Gln	Ser	Pro
			115				120					125			
Gly	Ala	Val	Leu	Ala	Leu	Thr	Asn	Gly	Arg	Arg	Met	Gly	Ile	Thr	Tyr
			130				135				140				
Gly	Tyr	Arg	Asn	Lys	Arg	His	Tyr	Met	Ser	Gly	Gly	Ala	Phe	Met	Asp
					150					155					160
Asn	Glu	Val	Asn	Asn	Leu	Lys	Lys	Ala	Ser	His	Gly	Tyr	Ala	Leu	Asp
					165					170					175
Gly	Arg	Val	Val	Tyr	Arg	Pro	Val	Leu	Asp	Ser	Lys	Lys	Leu	Ile	His
			180						185					190	
Ile	Gly	Phe	Ala	Ala	Asn	Tyr	Arg	Thr	Pro	Asn	Glu	Ser	Leu	Asn	Glu
			195				200					205			
Glu	Asp	Lys	Asn	Ile	Phe	Ile	Tyr	Lys	Ser	Pro	Gly	Val	Ser	Thr	Ile
			210				215				220				
Asp	Asn	Arg	Asn	Ile	Ala	Met	Ala	Thr	Ile	Asp	His	Val	Ala	Tyr	Gln
					230					235					240
Ile	Lys	Phe	Gly	Thr	Glu	Leu	Leu	Val	Tyr	Tyr	His	Arg	Phe	Cys	Leu
				245						250				255	
Gln	Ser	Glu	Tyr	Ile	Arg	Thr	His	Val	Glu	Arg	Asp	Asn	Ala	Phe	Lys
				260					265				270		
Asn	Tyr	Val	Ala	Gln	Gly	Ala	Tyr	Leu	Gln	Cys	Ser	Trp	Leu	Leu	Ser

275	280	285
Gly Glu Thr Tyr Leu Tyr Asp Glu Ser Val Ala Cys Ala Gly Arg Pro		
290	295	300
Glu Gly Lys Ser Leu Glu Val Cys Ser Arg Phe Asn Tyr Leu Thr Leu		
305	310	315
Asn Asp Glu Asp Ala Ser Ile Trp Gly Gly Glu Gln Lys Asp Ile Ser		
	325	330
Ile Gly Leu Asn Tyr Tyr Ile Asn Lys Tyr Ile Gly Ile Lys Leu Asn		
	340	345
Tyr Ser Tyr Leu Met Pro Gly Ala Ser Ile Lys Glu Ile Ser Arg Lys		
	355	360
Asn Phe Ser Val Phe Gln Gly Arg Phe Gln Phe Ile Phe		
370	375	380

<210> 5599
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 5599
Arg Gln Asn Tyr Arg Gln Asn Lys Val Lys Arg Phe Gln Asp Asn Phe
1 5 10 15
Pro Leu Ala Leu Cys Pro Gly Ser Ile Glu Pro Phe Met His Lys Gly
20 25 30
Asp Trp Ala Ile His Glu Val Leu Pro Ser Leu Leu Ser Glu Ile Gly
35 40 45
Pro Ala Asp Ile Arg Ile Ala Thr Phe Ser Ile Ser Glu Asp Ser Leu
50 55 60
Arg Pro Leu Phe Phe Leu Ala Asp Asp Lys Lys Ile Thr Gly Leu Thr
65 70 75 80
Leu Leu Leu Asp Thr Thr Val Lys Arg His Lys Leu Asp Leu Leu Leu
85 90 95
Phe Ala Ser Asn Ile Thr Pro Arg Ile Arg Ile Asp Ser Cys His Ala
100 105 110
Lys Val Leu Leu Val Glu Asn Asp Lys Tyr Gln Phe Gly Ile Ala Gly
115 120 125
Ser Ala Asn Leu Asn Gln Asn His Arg Trp Glu Asn Gly Phe Tyr Phe
130 135 140
Thr Ser Gly Lys His Phe Asn Tyr Phe Leu Glu Met Phe Glu Gln Ala
145 150 155 160
Tyr Asn Gln Ala Ile Ser Tyr Glu Ile Leu Glu
165 170

<210> 5600
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 5600
Glu Ile Asp Tyr Tyr Trp Gly Gln Leu Ile Ser Pro Gly Pro Gln Ala
1 5 10 15
Asn Asp Met Arg Ile Gln Phe Glu Ile Lys Glu Lys Leu Pro Asp Ile
20 25 30
Ile Gly Glu Ile Leu Asn Ser Glu Lys Trp Met Thr Leu Ile Lys Glu
35 40 45
Asp Ile Ser Gly Arg Lys Leu Val Val Ile Arg Asp Gln Ala Phe Asp
50 55 60
Ser Glu Ala Thr Val Glu Ile Tyr Ser Arg Glu Val Thr Ile Lys Thr
65 70 75 80

Ala Trp Ser Arg Tyr Thr Tyr Arg Leu Phe Val Leu Gly Asp Cys Val
85 90 95
Trp Cys Glu Tyr Asn Gly Ala Tyr Arg Gly Leu Leu Glu Gln Lys Leu
100 105 110
Leu Pro Ser Ile Thr Pro Lys Glu Ser Leu Leu Asp Ser Glu Val Leu
115 120 125
Asp Ser Ser Leu Tyr Gly His Glu Lys Lys Lys Leu Arg Glu Tyr Ala
130 135 140
Glu Asp Asn Leu Lys Leu Lys Lys Phe Arg Arg Glu Asn Phe Asn Glu
145 150 155 160
Asn Arg Thr Gly Val Ala Pro Phe Asp His Pro Lys Lys Val Tyr Asp
165 170 175
Glu Phe Ile Lys Glu Asp Tyr Ile Ala Pro Ser Ser Lys Glu Asn Asn
180 185 190
Lys

<210> 5601

<211> 408

<212> PRT

<213> B.fragilis

<400> 5601

Gly Ile Asp Tyr Met Val Gln Ser Gln Thr Gln Pro Ile Arg Arg Ile
1 5 10 15
Ala Phe Pro Ile Leu Ile Ala Leu Ser Val Ser His Cys Leu Asn Asp
20 25 30
Leu Leu Gln Ser Val Ile Ser Ala Val Tyr Pro Leu Phe Lys Glu Asp
35 40 45
Leu Ser Leu Ser Phe Ala Gln Ile Gly Leu Ile Thr Leu Val Tyr Gln
50 55 60
Met Ser Ala Ser Val Phe Gln Pro Leu Thr Gly Leu Ile Phe Asp Lys
65 70 75 80
Arg Pro Ile Ala Trp Ser Leu Pro Ile Gly Met Ser Phe Thr Leu Ile
85 90 95
Gly Met Leu Asn Leu Ala Phe Ala Ser Asn Leu Asn Trp Leu Leu Ala
100 105 110
Ser Val Phe Ile Ile Gly Ile Gly Ser Ser Val Leu His Pro Glu Ala
115 120 125
Ser Arg Ile Thr Phe Leu Ala Ser Gly Gly Lys Arg Gly Leu Ala Gln
130 135 140
Ser Leu Phe Gln Val Gly Gly Asn Leu Gly Gly Ser Leu Gly Pro Leu
145 150 155 160
Leu Val Ala Leu Leu Val Ala Pro Tyr Gly Arg His His Ile Ala Leu
165 170 175
Phe Ala Ile Leu Ala Leu Ala Ala Ile Cys Val Met Phe Pro Ile Cys
180 185 190
Arg Trp Tyr Arg Ser Tyr Leu Asn His Leu Lys Lys Arg Pro Ile His
195 200 205
Ala Lys Ala Tyr Ile Glu Arg Pro Leu Pro Pro Gln Lys Thr Val Phe
210 215 220
Ala Ile Thr Ile Leu Met Ile Leu Ile Phe Ser Lys Tyr Ile Tyr Met
225 230 235 240
Ala Ser Leu Asn Ser Tyr Tyr Thr Phe Tyr Leu Ile His Lys Phe Asn
245 250 255
Val Ser Ile Gln Gln Ser Gln Leu Phe Leu Phe Val Phe Leu Val Ala
260 265 270
Thr Ala Ile Gly Thr Leu Met Gly Gly Pro Ile Gly Asp Lys Ile Gly
275 280 285

Arg Lys Tyr Val Ile Trp Gly Ser Ile Leu Gly Thr Ala Pro Phe Ser
 290 295 300
 Leu Leu Met Pro His Ala Gly Leu Val Trp Thr Ile Ile Leu Ser Phe
 305 310 315 320
 Cys Val Gly Leu Met Leu Ser Ser Ala Phe Pro Ala Ile Leu Leu Tyr
 325 330 335
 Ala Gln Glu Leu Leu Pro Asn Lys Leu Gly Leu Ile Ser Gly Leu Phe
 340 345 350
 Phe Gly Phe Ala Phe Gly Val Ala Gly Ile Ala Ser Ala Val Leu Gly
 355 360 365
 Asn Met Ala Asp Lys Phe Gly Ile Asp Ala Val Tyr Asn Val Cys Ala
 370 375 380
 Phe Met Pro Leu Leu Gly Leu Val Thr Trp Phe Leu Pro Asp Leu Lys
 385 390 395 400
 Lys Val Arg Ser Glu Lys Gln Glu
 405

<210> 5602

<211> 64

<212> PRT

<213> B.fragilis

<400> 5602

Asp Thr Ile Leu Tyr Gly Arg Asp Gly Thr Ser Lys Gly Glu Leu Leu
 1 5 10 15
 Ile Asp Ile Lys Leu Cys Asn Met Val Lys Glu Phe Thr Pro Asp Met
 20 25 30
 Ala Asn Ser Met Gln Lys Ile Val Arg Lys Cys Phe Pro Arg Thr Leu
 35 40 45
 Gln Ile Val Asn Lys Ile His Val Phe Thr Leu Val Tyr Glu Ala Met
 50 55 60

<210> 5603

<211> 827

<212> PRT

<213> B.fragilis

<400> 5603

Thr Asn Leu Tyr Glu Met Lys Lys Glu Arg Tyr Leu Arg Glu Met Asp
 1 5 10 15
 Asp Gln Asn Asp Asn Ala Phe Ser Leu Ile Ala Asp Phe Asp Gly Asn
 20 25 30
 Glu Asp Gln Val Phe Asp Ile Lys Val Gly Glu Thr Leu Pro Val Leu
 35 40 45
 Pro Leu Arg Asn Met Val Leu Phe Pro Gly Val Phe Met Pro Val Ser
 50 55 60
 Val Gly Arg Lys Ser Ser Leu Arg Leu Val Arg Glu Ala Asp Lys Lys
 65 70 75 80
 Lys Ser Tyr Ile Ala Val Val Cys Gln Lys Met Ala Glu Thr Asp Glu
 85 90 95
 Pro Ala Phe Glu Asp Leu His Pro Ile Gly Thr Ile Gly Lys Ile Val
 100 105 110
 Arg Val Leu Glu Met Pro Asp Gln Thr Thr Thr Val Ile Gln Gly
 115 120 125
 Met Lys Arg Leu Glu Leu Lys Asn Ile Thr Glu Thr His Pro Tyr Leu
 130 135 140
 Lys Gly Glu Val Asn Ile Val Glu Glu Glu Ile Pro Ser Lys Asp Asp
 145 150 155 160
 Lys Glu Phe Gln Ala Leu Val Glu Thr Cys Lys Asp Leu Thr Ile Arg

Ala Val Gly Gly Glu Ile Leu Phe Val Glu Thr Ser Leu Ser Arg Gly
645 650 655
Lys Gly Gly Arg Leu Thr Leu Thr Gly Asn Leu Gly Glu Val Met Lys
660 665 670
Glu Ser Ala Met Leu Ala Leu Glu Tyr Ile Lys Ala His Ala Ser Leu
675 680 685
Leu Asn Leu Asp Glu Glu Ile Phe Asp Asn Trp Asn Ile His Val His
690 695 700
Val Pro Glu Gly Ala Ile Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr
705 710 715 720
Met Ala Thr Ser Leu Ala Ser Ala Leu Thr Gln Arg Lys Val Lys Ala
725 730 735
Asn Leu Ala Met Thr Gly Glu Ile Thr Leu Arg Gly Lys Val Leu Pro
740 745 750
Val Gly Gly Ile Lys Glu Lys Ile Leu Ala Ala Lys Arg Ala Gly Ile
755 760 765
Lys Glu Ile Ile Met Ser Ala Glu Asn Lys Lys Asn Ile Asp Glu Ile
770 775 780
Gln Asp Ile Tyr Leu Lys Gly Leu Thr Phe His Tyr Val Asn Asp Val
785 790 795 800
Lys Glu Val Phe Ala Ile Ala Leu Thr Gln Glu Lys Val Ala Asp Ala
805 810 815
Ile Asp Leu Ser Val Lys Lys Ala Ser Gln Glu
820 825

<210> 5604
<211> 65
<212> PRT
<213> B.fragilis

<400> 5604
Gln Ile Ile Tyr Ile Thr Leu Asn Ile Gly Cys Arg Leu Phe Leu Leu
1 5 10 15
Ser Lys Asp Glu Lys Gln Ser Leu Asn Ile Glu Leu Ser Arg Glu Glu
20 25 30
Ile Glu Tyr Phe Phe Lys Pro Tyr Pro Ala Asp Glu Thr Glu Ala Tyr
35 40 45
Glu Ile Cys Asn Asp Phe Ile Lys Lys Ile Ser Thr Asp Lys Ser Ile
50 55 60
Leu
65

<210> 5605
<211> 70
<212> PRT
<213> B.fragilis

<400> 5605
Tyr Ile Ile Tyr Tyr Gln Arg Phe Ile Leu Leu Trp Glu Gln Gly Val
1 5 10 15
Val Gly Ser Asn Pro Ala Thr Pro Thr Gly Asn Lys Ser Asn His Thr
20 25 30
Cys Gln Cys Gly Tyr Ser Tyr Phe Ile Leu Cys Tyr Gly Gly Ile Pro
35 40 45
Ile Ile Arg Asn Asp Ala Thr Gly Thr Glu Arg Arg Leu Leu His Phe
50 55 60
Gln Ile Lys Leu Pro Gly
65 70

<210> 5606
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 5606

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Lys Tyr Asp Phe Thr Ile Lys Arg Gly Lys Lys Ile Trp Lys Glu Ser
1      5      10      15
Leu Asp Gly Ile Ser Gln Ile Asp Ala Phe Pro Val Leu Lys Ala Arg
      20      25      30
Leu Gly Lys Ser Leu Pro Gln Phe Val Tyr Thr Leu Ser Pro Asp Lys
      35      40      45
Gln Thr Ala Thr Leu Gln Ile Met Asn Leu Tyr Gln Leu Pro Gln Leu
      50      55      60
Lys Gln Phe Cys Asp Ser Val Phe Ser Val Ile Asn Arg Glu His Val
65      70      75      80
Pro Asn Leu Val Ile Asp Val Arg Asn Asn Lys Gly Gly Ser Ser Ala
      85      90      95
Gly Val Asp Met Leu Leu Ser Tyr Leu Ser His Asp Ala Tyr Thr Leu
      100     105     110
Tyr Ile Lys Thr Asp Leu Lys Ile Ser Ser Tyr Ser Lys Arg Tyr Asn
      115     120     125
Glu Gln Lys His Pro Glu Thr Tyr Glu Glu Ile Lys Asn Leu Pro Asp
      130     135     140
Gly Ser Leu Phe Ala Ile Arg Asp Ser Phe Val Glu Gly Asn Arg Asp
145     150     155     160
Lys Ala Asp Ile Tyr Lys Gly Ser Val Thr Val Leu Val Asn Glu Ser
      165     170     175
Thr Tyr Ser Gly Ala Ser Thr Phe Ala Ser Ala Ile Lys Lys Ser His
      180     185     190
Ala Gly Lys Val Leu Gly Glu Thr Gly Cys Pro Thr Val Tyr Phe Gly
      195     200     205
Asn Tyr Met Ser Phe Thr Leu Pro Asn Ser Arg Leu Glu Tyr Tyr Ile
      210     215     220
Ser Leu Asn Lys Phe Tyr Glu
225      230

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<210> 5607
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 5607

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Leu Asn Lys Tyr Phe Ile Met Lys Arg Ile Leu Cys Pro Lys Cys Glu
1      5      10      15
Asn Tyr Leu Ser Phe Asp Glu Thr Lys Tyr Ser Glu Gly Gln Ser Leu
      20      25      30
Val Phe Val Cys Glu His Cys Gly Lys Gln Phe Ser Ile Arg Leu Gly
      35      40      45
Lys Ser Lys Met Lys Ala Pro Arg Lys Glu Glu Lys Leu Asp Glu Asp
      50      55      60
Val Tyr Lys Glu Glu Phe Gly Cys Ile Val Val Ile Glu Asn Val Phe
65      70      75      80
Gly Phe Lys Gln Val Leu Pro Leu Gln Glu Gly Asp Asn Ile Ile Gly
      85      90      95
Arg Arg Cys Val Gly Thr Asp Ile Asn Thr Pro Ile Glu Thr Gly Asp
      100     105     110
Met Ser Met Asp Arg Arg His Cys Ile Ile Asn Val Lys Arg Asn Arg
      115     120     125

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Gln Gly Lys Leu Val Tyr Thr Leu Arg Asp Ala Pro Ser Leu Thr Gly
 130 135 140
 Thr Phe Leu Met Asn Glu Ile Leu Gly Asp Lys Asp Arg Ile Arg Ile
 145 150 155 160
 Asp Asp Gly Ala Ile Ile Thr Ile Gly Ala Thr Thr Leu Ile Leu Arg
 165 170 175
 Ala Ala Lys Lys Glu Glu Ile
 180

<210> 5608
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 5608
 Glu Arg Arg Tyr Glu Met Gly Arg Ile Lys Glu Glu Ala Trp Val Glu
 1 5 10 15
 Lys Cys Thr Val Leu His Glu Gly Lys Ala Thr Pro Asn Ile Tyr Tyr
 20 25 30
 Asn Val Phe Ala Asp Gly Glu Gln Leu Cys Glu Ile Ser Tyr Asp Arg
 35 40 45
 Leu Ile Ala Ile Arg Asn Leu Ile Asn Gln Ile Glu Lys Glu Lys Lys
 50 55 60
 Gly Glu Cys His Glu
 65

<210> 5609
 <211> 170
 <212> PRT
 <213> B.fragilis

<400> 5609
 Pro Asn His Leu Met Asp Ile Ile Asp Arg Ile Lys Gln Tyr Leu Asn
 1 5 10 15
 His Lys Gly Ile Ser Asp Tyr Arg Phe Glu Lys Thr Leu Ser Leu Ser
 20 25 30
 Lys Gly Tyr Ile Asn Lys Ala Lys Asn Pro Thr Ala Asp Ile Leu Met
 35 40 45
 Lys Met Cys Gly Ile Tyr Thr Asp Ile Ser Thr Glu Trp Leu Leu Arg
 50 55 60
 Gly Glu Gly Glu Met Leu Arg Glu Lys Arg Glu Asp Leu Gly Leu His
 65 70 75 80
 Arg Ala Glu Ser Ala Ser Thr Asp Glu Asn Ser Leu Ile Tyr Lys Met
 85 90 95
 Tyr Lys Glu Lys Asp Asp Glu Asn Lys Thr Leu Ile Lys Gln Asn Ala
 100 105 110
 Val Leu Glu Glu Arg Ile Arg Gln Leu Glu Ala Asp Asn Glu Ser Leu
 115 120 125
 Arg Ser Gln Ser Gly Ala Asp Arg Ile Thr Asp Thr Phe Ser Asp Leu
 130 135 140
 Pro Leu Val Asp Tyr Glu Glu Asp Tyr Pro Pro Val Glu Arg Pro Ser
 145 150 155 160
 Ser Ser Lys His Pro Leu Ala Gly Lys Ala
 165 170

<210> 5610
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5610

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Ile Ser Phe His Met Ile Asp Asn Asn Ile Phe Ser Cys Gly Pro Leu
1           5           10           15
Pro Ser Asn Asp Gly Tyr Thr Trp Thr Ile Val Ser Arg Leu Gly Asp
           20           25           30
Met Leu Asn Glu Ala Glu Ala Leu Phe Gly Glu Arg Asp Lys Arg Tyr
           35           40           45
Thr Ile Leu Gly Ile Glu Leu Ala Asn Ile Lys Gln Pro Gln Ile Trp
           50           55           60
Tyr Pro Asn Asp Cys Asn His Val Ile Ile Gln Val Thr Glu Asp Cys
65           70           75           80
Ser Asn Asn Met Glu Arg Ala Ile Phe Gln Val Ala His Glu Ala Ile
           85           90           95
His Cys Leu Cys Pro Asn Pro Lys Lys Lys Thr Thr Ile Leu Glu Glu
           100          105          110
Gly Leu Ala Thr Tyr Phe Ser Met Tyr Tyr Thr Arg Lys Arg Lys Ile
           115          120          125
Tyr Tyr Asn Ile Asp Asn Leu Gln Tyr Gln Lys Pro Tyr Glu Phe Cys
           130          135          140
Ser Lys Leu Leu Asn Tyr Asp Ser Glu Leu Ile Lys Lys Ala Arg Ile
145          150          155          160
Ile Glu Pro Asp Ile Ser Phe Ile Asn Lys Glu Ile Leu Leu Asn Ile
           165          170          175
Cys Pro Lys Ile Asp His Thr Leu Leu Asp Glu Leu Thr Lys Lys Phe
           180          185          190

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<210> 5611

<211> 110

<212> PRT

<213> B.fragilis

<400> 5611

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Leu Ile Phe His Leu Val Pro Val Tyr Ala Tyr Lys Val His Leu Leu
1           5           10           15
His Ser Asp Leu Tyr Phe Cys Lys Cys Asn Arg Tyr Tyr Pro Asn Glu
           20           25           30
Gln Ser Val Lys Asn Val Leu Gly Val Phe Asp Lys Val Cys Ile Gly
           35           40           45
Ser Leu Leu Ser Ile Asp Tyr Arg Leu Leu Tyr Thr Leu Ser Phe Leu
           50           55           60
His Ser Leu Leu Val Ala Gly Phe Pro Ile Asp Leu Met Ala Val Arg
65           70           75           80
Leu Ala Lys Lys Gln His Ala Ser Gly Ser Phe Ala Leu Cys Asp Asn
           85           90           95
Pro Asn Tyr Thr Leu Leu Leu Ser Leu Tyr Val Ser Phe Gln
           100          105          110

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<210> 5612

<211> 81

<212> PRT

<213> B.fragilis

<400> 5612

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Ser Lys His His Ile Cys Asn Met Asn Asp Asp Lys Thr Ile Thr Ala
1           5           10           15
Ala Ile Glu Thr Ser Asn Val Thr Ala Leu Leu Ala Ala Tyr Arg Lys
           20           25           30
Phe Thr Ser Ser Ser Gly Ala Thr Thr Asp Glu Phe Phe Arg Phe Ile

```

35 40 45
 Thr Thr Pro Thr Pro Glu Arg Glu Glu Phe Leu Ala Leu Tyr Cys Ser
 50 55 60
 Ser Thr Ser Ser Val Ser Gly Thr Ile Ile Gln Thr Asn Tyr Asn Ala
 65 70 75 80
 Leu

<210> 5613
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 5613
 Ser Ser Asn Gln Leu Arg Asn Ile Arg Ile Glu Met Glu Leu Ser Asp
 1 5 10 15
 Glu Thr Leu Gln Gln Ile Arg Glu Met Ala Ala Ala Leu Leu Pro Pro
 20 25 30
 Ala Glu Ile Ala Ile Leu Ile Ser Leu Pro Ala Gly Glu Arg Ser Tyr
 35 40 45
 Phe Cys Asp Ile Cys Arg Asn His His His Ser Pro Ile Tyr Glu Ala
 50 55 60
 Tyr His Gln Gly Arg Leu Gln Thr Lys Phe Glu Leu Arg Lys Thr Val
 65 70 75 80
 Ile Lys Leu Ala Lys Ala Gly Ser Pro Ala Ala Glu Pro Leu Ala Asp
 85 90 95
 Lys Tyr Met Lys Glu Gln Ile Ile Asn Asp
 100 105

<210> 5614
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 5614
 Leu His Asp Gln Phe Cys Phe Ile Asp Ser Gly Ser Asn Glu Thr Ile
 1 5 10 15
 Tyr Asn Gly Leu Ala Glu Asp Cys Leu Trp Glu Ile Val Leu Phe Ser
 20 25 30
 Asn Gly Phe Val Tyr His Ala Leu Gln Lys Phe Arg Ile Phe Ile Glu
 35 40 45
 Glu Lys Asp Phe Asn His Thr Val Leu Tyr Asn Ser His Phe His Leu
 50 55 60
 Asn Phe
 65

<210> 5615
 <211> 374
 <212> PRT
 <213> B.fragilis

<400> 5615
 Lys Glu Cys Gln Gln Asp Tyr Lys Phe Met Arg Ser Asn Arg Phe Ile
 1 5 10 15
 Lys Arg Leu Asp Leu Tyr Ile Ile Lys Lys Phe Leu Gly Thr Tyr Val
 20 25 30
 Phe Ala Ile Ala Leu Ile Ile Ser Ile Ala Val Val Phe Asp Phe Asn
 35 40 45
 Glu Lys Met Asp Lys Phe Met Glu Arg Ser Ala Pro Trp Ser Ala Ile

```

      50              55              60
Ile Phe Asp Tyr Tyr Met Asn Phe Ile Pro Tyr Phe Ala Asn Leu Phe
65              70              75              80
Ser Pro Leu Phe Val Phe Ile Ala Val Ile Phe Phe Thr Ser Lys Leu
      85              90              95
Ala Glu Asn Ser Glu Ile Ile Ala Met Phe Ser Thr Gly Met Ser Phe
      100             105             110
Lys Arg Met Leu Arg Pro Tyr Met Ile Ser Ala Gly Ile Ile Ala Ile
      115             120             125
Ser Thr Phe Ile Leu Gly Ser Tyr Val Ile Pro Arg Gly Ser Val Thr
      130             135             140
Arg Leu Asp Phe Glu Asp Lys Tyr Val Lys Lys Lys Lys Thr Thr Tyr
145             150             155             160
Val His Asn Ile Gln Leu Glu Ile Asp Thr Gly Val Ile Ala Tyr Ile
      165             170             175
Asp Asn Tyr Gln Asp Tyr Asn Lys Thr Gly Asn Arg Phe Ser Leu Asp
      180             185             190
Lys Phe Val Asp Lys Lys Leu Val Ser His Leu Thr Ala Arg Ser Ile
      195             200             205
Thr Tyr Asp Thr Thr Ala Val Asn Lys Trp Thr Ile Lys Asp Tyr Met
      210             215             220
Ile Arg Asn Leu Asp Gly Leu Lys Glu Thr Ile Val Arg Gly Asp Lys
225             230             235             240
Met Asp Ser Ile Ile Pro Met Glu Pro Ala Asp Phe Met Ile Met Arg
      245             250             255
Asn Gln Gln Glu Met Leu Thr Ser Pro Gln Leu Ser Ala Tyr Ile Asp
      260             265             270
Lys Gln Lys Gln Arg Gly Ile Ala Asn Ile Lys Glu Phe Glu Ile Glu
      275             280             285
Tyr His Lys Arg Ile Ala Met Ser Phe Ala Ser Phe Ile Leu Thr Val
      290             295             300
Ile Gly Val Ser Leu Ser Ser Arg Lys Thr Lys Gly Gly Met Gly Leu
305             310             315             320
His Leu Gly Ile Gly Leu Gly Leu Ser Phe Ser Tyr Ile Leu Phe Gln
      325             330             335
Thr Val Ala Ser Thr Phe Ala Val Asn Gly Asn Met Pro Pro Met Ile
      340             345             350
Ala Met Trp Ile Pro Asn Leu Leu Tyr Ala Leu Ile Ala Phe Tyr Leu
      355             360             365
Tyr Arg Lys Ala Pro Lys
370

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<210> 5616

<211> 81

<212> PRT

<213> B.fragilis

<400> 5616

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Gly Leu Ser His Leu His Ser Phe Leu Ser Ser Ile Phe Gly Phe Gly
1              5              10              15
Leu Ala Gly Val Leu Leu Thr Lys Tyr Cys Pro Asp Pro Thr Leu Phe
      20              25              30
Glu Ser Arg Glu Ala Trp Glu Val Ala Ser Val Asn Ala His Tyr Ile
      35              40              45
Trp Tyr Tyr Phe Ala Ala Ile Gly Leu Val Ala Ala Ile Ala Leu Leu
50              55              60
Ile Phe Ala Lys Ile Thr Asp Phe Ile Asp Lys Lys Lys Lys Thr Asn
65              70              75              80
Val

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<210> 5617
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 <213> B.fragilis

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Asn	Asn	Asn	Gln	Arg	Met	Met	Asn	Gln	Glu	Leu	Leu	Met	Ser	Pro	Asn
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Arg	Leu	Val	Thr	Phe	Leu	Gln	Lys	Pro	Ala	Ala	Glu	Phe	Thr	Lys	Ala
			20					25					30		
Asp	Ile	Ile	Asn	Tyr	Ile	Gln	Gln	Asn	Glu	Ile	Arg	Met	Val	Asn	Phe
	35					40						45			
Met	Tyr	Pro	Ala	Ala	Asp	Gly	Arg	Leu	Lys	Thr	Leu	Asn	Phe	Val	Ile
	50					55					60				
Asn	Asn	Ala	Ser	Tyr	Leu	Asp	Ala	Ile	Leu	Thr	Cys	Gly	Glu	Arg	Val
65					70					75				80	
Asp	Gly	Ser	Ser	Leu	Phe	Pro	Phe	Ile	Glu	Ala	Gly	Ser	Ser	Asp	Leu
				85					90					95	
Tyr	Val	Ile	Pro	Arg	Phe	Arg	Thr	Ala	Phe	Val	Asp	Pro	Phe	Ala	Glu
			100					105					110		
Ile	Pro	Thr	Leu	Val	Met	Leu	Cys	Ser	Phe	Phe	Asn	Lys	Asp	Gly	Glu
	115						120					125			
Pro	Leu	Glu	Ser	Ser	Pro	Glu	Tyr	Thr	Leu	His	Lys	Ala	Cys	Lys	Ala
	130					135					140				
Phe	Thr	Asp	Val	Thr	Gly	Met	Glu	Phe	Gln	Ala	Met	Gly	Glu	Leu	Glu
145					150				155					160	
Tyr	Tyr	Val	Ile	Ser	Glu	Asp	Asp	Gly	Leu	Phe	Pro	Ala	Thr	Asp	Gln
				165				170						175	
Arg	Gly	Tyr	His	Glu	Ser	Gly	Pro	Tyr	Ala	Lys	Phe	Asn	Asp	Phe	Arg
			180					185					190		
Thr	Gln	Cys	Met	Ser	Tyr	Ile	Ala	Gln	Thr	Gly	Gly	Gln	Ile	Lys	Tyr
	195						200					205			
Gly	His	Ser	Glu	Val	Gly	Asn	Phe	Met	Leu	Asp	Gly	Lys	Val	Tyr	Glu
	210					215					220				
Gln	Asn	Glu	Ile	Glu	Phe	Leu	Pro	Val	Asn	Ala	Glu	Asn	Ala	Ala	Asp
225					230					235					240
Gln	Leu	Met	Ile	Ala	Lys	Trp	Val	Ile	Arg	Asn	Leu	Ala	Tyr	Gln	Tyr
				245					250					255	
Gly	Tyr	Asp	Ile	Thr	Phe	Ala	Pro	Lys	Ile	Thr	Val	Gly	Lys	Ala	Gly
		260						265					270		
Ser	Gly	Leu	His	Ile	His	Met	Arg	Met	Met	Lys	Asp	Gly	Gln	Asn	Gln
	275					280						285			
Met	Leu	Lys	Asp	Gly	Val	Leu	Ser	Asp	Thr	Ala	Arg	Lys	Ala	Ile	Ala
	290					295				300					
Gly	Met	Met	Gln	Leu	Ala	Pro	Ser	Ile	Thr	Ala	Phe	Gly	Asn	Thr	Asn
305					310					315					320
Pro	Thr	Ser	Tyr	Phe	Arg	Leu	Val	Pro	His	Gln	Glu	Ala	Pro	Thr	Asn
				325					330					335	
Val	Cys	Trp	Gly	Asp	Arg	Asn	Arg	Ser	Val	Leu	Val	Arg	Val	Pro	Leu
		340						345					350		
Gly	Trp	Ser	Ala	Gln	Thr	Asp	Met	Cys	Ala	Leu	Ala	Asn	Pro	Leu	Glu
	355						360					365			
Ser	Asp	Ser	Asn	Tyr	Asp	Thr	Gln	Lys	Gln	Thr	Val	Glu	Met	Arg	
	370					375						380			
Ser	Pro	Asp	Gly	Ser	Ala	Asp	Leu	Tyr	Gln	Leu	Leu	Ala	Gly	Leu	Ala
385					390					395					400
Val	Ala	Cys	Arg	His	Gly	Phe	Glu	Ile	Glu	Asn	Ala	Leu	Ala	Ile	Ala

GenBank accession number: U00180.1 (B.fragilis chromosome) (1995)

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<212> PRT
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<210> 5619
<211> 76
<212> PRT
<213> B.fragilis
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Leu	Phe	Phe	Val	Met	Asp	Lys	Thr	Ala	Glu	Gly	Tyr	Asp	Glu	Ser	Thr
			20					25					30		
Ser	Gln	Tyr	Gly	Ile	Gly	Glu	His	Ile	Asp	Gly	Asp	Met	Gly	Asn	Lys
		35					40					45			
Pro	Asn	Thr	Leu	Gln	Ser	Arg	His	Lys	Arg	Leu	Val	Met	Tyr	Leu	Arg
	50					55					60				

2390

Phe Gln Gln Ile Asp Tyr Tyr Lys Asp Ser Gly Gln
 65 70 75

<210> 5620

<211> 333

<212> PRT

<213> B.fragilis

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Ile Val Lys Gln Arg Ile Met Gln Phe Tyr Ser Arg Asn Glu Ala Ile
 1 5 10 15
 Asn Arg Ile Asn Lys Leu Ala Gly Ala Gly Lys Ala Phe Leu Phe Ile
 20 25 30
 Ile Asp Tyr Lys Gln Glu Cys Ser Phe Ile Glu Lys Val Asp Asp Ile
 35 40 45
 Asp Ser Ser Glu Leu Leu Tyr Asn Leu Asn Gly Phe Thr Asn Cys Thr
 50 55 60
 Ser Val Val Thr Pro Phe Arg Tyr Pro Ile Ile Trp Gln Pro Gln Pro
 65 70 75 80
 Ile Ser Leu Ser Gln Tyr Lys Arg Ser Phe Asp Ile Ile Arg Lys Asn
 85 90 95
 Ile Leu Ser Gly Asn Ser Phe Leu Thr Asn Leu Thr Cys Met Thr Pro
 100 105 110
 Val Asn Thr Asn Leu Gly Leu Lys Asp Ile Phe Tyr His Ser Arg Ala
 115 120 125
 Leu Tyr Lys Leu Trp Leu Lys Glu Thr Phe Val Val Phe Ser Pro Glu
 130 135 140
 Ile Phe Ile Arg Ile Glu Asn Gly Arg Ile Ser Ser Tyr Pro Met Lys
 145 150 155 160
 Gly Thr Ile Asp Ala Thr Leu Pro Ser Ala Thr Arg Leu Leu Met Glu
 165 170 175
 Asp Glu Lys Glu Ala Ala Glu His Ala Thr Ile Val Asp Leu Ile Arg
 180 185 190
 Asn Asp Leu Ser Ile Val Ala Asp Asn Val Ser Val Thr Arg Tyr Arg
 195 200 205
 Tyr Val Asp Thr Leu Tyr Thr Asn His Gly Pro Ile Leu Gln Thr Ser
 210 215 220
 Ser Glu Ile Ser Gly Val Leu Pro Lys Asn Tyr Val Asp His Leu Gly
 225 230 235 240
 Glu Ile Leu Phe Arg Leu Leu Pro Ala Gly Ser Ile Thr Gly Ala Pro
 245 250 255
 Lys Tyr Lys Thr Ile Glu Ile Ile Glu Gln Ala Glu Glu Tyr Glu Arg
 260 265 270
 Gly Phe Tyr Thr Gly Ile Thr Gly Tyr Phe Asp Gly Arg Lys Leu Asp
 275 280 285
 Ser Ala Val Met Ile Arg Phe Ile Glu Glu Gln Asn Gly Gln Ile Phe
 290 295 300
 Phe Lys Ser Gly Gly Gly Ile Thr Cys Lys Ser Asp Leu Glu Asn Glu
 305 310 315 320
 Tyr Asn Glu Met Lys Gln Lys Val Tyr Val Pro Ile Tyr
 325 330

<210> 5621

<211> 178

<212> PRT

<213> B.fragilis

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Thr Met Lys His His Val His Leu Ile Ile Tyr Phe Ala Cys Ile Ser

225 230 235 240
 His Tyr Gln Ala Leu Val Cys Ile Pro Glu Ser Pro Val Cys Asn Leu
 245 250 255
 Val Asn Leu Thr Ile Ser Phe Asp Gly Lys Leu Asn Ile Thr Ala Ala
 260 265 270
 Lys Tyr Lys
 275

<210> 5623
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 <212> PRT
 <213> B.fragilis

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 Asn His Phe Asn Thr Leu Asn Tyr Leu Ile Met Gly Leu Asp Ile Ala
 1 5 10 15
 Ile Ala Ser Ala Val Val Glu Ile Ile Thr Leu Ile Phe Phe Phe Val
 20 25 30
 Leu Cys Arg Asn Val Ser Lys Ile Lys Lys Glu Ile Val Ser Asn Asp
 35 40 45
 Asn Leu Pro Gly Met Phe Ala Met Tyr Ile Ser Leu Gly Glu Thr Asp
 50 55 60
 Lys Ala Lys Lys Ile Leu Tyr Lys Ala Ile Ser Lys Glu Pro Glu Phe
 65 70 75 80
 Ile Ala Ala Phe Cys Tyr Asn Gly Asn Asn Ser Ala Gln Gln Ser Thr
 85 90 95
 Leu Lys Arg Lys Tyr Lys Pro Tyr Leu Glu Ile Leu Gly Leu Glu Leu
 100 105 110
 Asp Phe Glu Leu Val Asn Lys Phe Ile Gln Glu Arg Glu Lys
 115 120 125

<210> 5624
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<400> 5624
 Val Ile Ile Lys Asn Arg Ile Leu Ile Ile Pro Ala Phe Phe Leu Leu
 1 5 10 15
 Pro Lys Arg Arg Arg Lys Gly Lys Ala Pro Lys Ile Leu Asn Lys Met
 20 25 30
 Ala Thr Lys Glu Tyr Phe Pro Gly Ile Gly Lys Ile Lys Phe Glu Gly
 35 40 45
 Lys Asp Ser Lys Asn Pro Met Ala Phe Arg Tyr Tyr Asp Ala Glu Lys
 50 55 60
 Met Ile Asn Gly Arg Ser Met Lys Asp Trp Leu Lys Phe Ala Met Ala
 65 70 75 80
 Trp Trp His Thr Leu Cys Ala Glu Gly Gly Asp Gln Phe Gly Gly Gly
 85 90 95
 Thr Lys Gln Phe Pro Trp Asn Gly Asp Pro Asp Pro Val Gln Ala Ala
 100 105 110
 Lys Asn Lys Met Asp Ala Gly Phe Glu Phe Met Gln Lys Met Gly Ile
 115 120 125
 Gly Tyr Tyr Cys Phe His Asp Val Asp Leu Val Thr Glu Ala Asp Ser
 130 135 140
 Ile Glu Ala Tyr Glu Ala Asn Leu Lys Glu Leu Val Ala Tyr Ala Lys
 145 150 155 160
 Gln Lys Gln Ala Glu Thr Gly Ile Lys Leu Leu Trp Gly Thr Ala Asn
 165 170 175

Val Phe Ser His Ala Arg Tyr Met Asn Gly Ala Ala Thr Asn Pro Asp
 180 185 190
 Phe Asp Val Val Ala Arg Ala Ala Val Gln Ile Lys Asn Ala Ile Asp
 195 200 205
 Ala Thr Ile Glu Leu Gly Gly Thr Asn Tyr Val Phe Trp Gly Gly Arg
 210 215 220
 Glu Gly Tyr Met Ser Leu Leu Asn Thr Asp Gln Lys Arg Glu Lys Glu
 225 230 235 240
 His Leu Ala Gln Met Leu Thr Ile Ala Arg Asp Tyr Gly Arg Ala Arg
 245 250 255
 Gly Phe Lys Gly Thr Phe Leu Ile Glu Pro Lys Pro Met Glu Pro Thr
 260 265 270
 Lys His Gln Tyr Asp Val Asp Thr Glu Thr Val Ile Gly Phe Leu Lys
 275 280 285
 Ala His Gly Leu Asp Gln Asp Phe Lys Val Asn Ile Glu Val Asn His
 290 295 300
 Ala Thr Leu Ala Gly His Thr Phe Glu His Glu Leu Ala Val Ala Val
 305 310 315 320
 Asp Asn Gly Met Leu Gly Ser Ile Asp Ala Asn Arg Gly Asp Tyr Gln
 325 330 335
 Asn Gly Trp Asp Thr Asp Gln Phe Pro Ile Asp Asn Phe Glu Leu Thr
 340 345 350
 Gln Ala Met Met Gln Ile Ile Arg Asn Asp Gly Leu Gly Asn Gly Gly
 355 360 365
 Thr Asn Phe Asp Ala Lys Thr Arg Arg Asn Ser Thr Asp Pro Glu Asp
 370 375 380
 Ile Phe Ile Ala His Ile Ala Gly Met Asp Ala Met Ala Arg Ala Leu
 385 390 395 400
 Glu Ser Ala Ala Asn Leu Leu Asn Glu Ser Pro Tyr Gln Lys Met Leu
 405 410 415
 Ser Asp Arg Tyr Ala Ser Phe Asp Ala Gly Lys Gly Lys Glu Phe Glu
 420 425 430
 Glu Gly Lys Leu Ser Leu Glu Glu Leu Val Ala Tyr Ala Lys Ala Asn
 435 440 445
 Gly Glu Pro Lys Gln Thr Ser Gly Gln Gln Glu Leu Tyr Glu Ala Leu
 450 455 460
 Val Asn Ile Tyr Ser Leu
 465 470

<210> 5625

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<212> PRT

<213> B.fragilis

<400> 5625

Met Ile Tyr Asn Ile Asn Val Ile Thr Asn Asn Lys Phe Ser Met Lys
 1 5 10 15
 Lys Asn Arg Leu Thr Leu Val Ala Ala Ile Phe Leu Ser Gly Thr Ile
 20 25 30
 Leu Phe Ser Ser Cys Val Gly Ser Phe Gly Leu Phe Asn Arg Ile Ser
 35 40 45
 Ser Trp Asn Gln Ser Ile Gly Thr Lys Phe Val Asn Glu Leu Val Phe
 50 55 60
 Leu Ala Leu Asn Ile Val Pro Val Tyr Gly Val Ala Tyr Leu Ala Asp
 65 70 75 80
 Ala Leu Val Ile Asn Ser Ile Glu Phe Trp Ser Gly Thr Asn Pro Met
 85 90 95
 Ala Asn Val Gly Asp Val Lys Lys Val Lys Gly Glu Asn Gly Asp Tyr
 100 105 110

Leu Val Lys Thr Leu Glu Asn Gly Tyr Ser Ile Thr Lys Glu Gly Glu
 115 120 125
 Asp Ser Ala Met Glu Leu Ile Tyr Asn Lys Glu Ala Asn Thr Trp Asn
 130 135 140
 Val Val Ala Asp Gly Val Ser Thr Glu Leu Leu Lys Met Asn Asn Asp
 145 150 155 160
 Gly Thr Ala Glu Met Asn Leu Pro Asn Gly Asp Lys Met Asn Val Thr
 165 170 175
 Leu Asp Ala Gln Gly Met Met Ala Ala Arg Gln Ala Thr Met Gly Gly
 180 185 190
 Leu Leu Phe Ala Ala Arg
 195

<210> 5626

<211> 510

<212> PRT

<213> B.fragilis

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Thr Thr Asn Lys Leu Ile Asn Ser Ile Met Phe Leu Leu Gly Tyr Asp
 1 5 10 15
 Ile Gly Ser Ser Ser Val Lys Ala Ser Leu Val Asp Ala Glu Thr Gly
 20 25 30
 Lys Cys Val Ala Ser Ala Phe Phe Pro Lys Thr Glu Ala Gly Ile Ile
 35 40 45
 Ala Ile Arg Pro Gly Trp Ala Glu Gln Glu Pro Glu Ser Trp Trp Glu
 50 55 60
 Ser Leu Lys Leu Ser Thr Arg Ser Ile Leu Ser Glu Ser Arg Val Asp
 65 70 75 80
 Ala Lys Asp Ile Lys Ala Ile Gly Ile Ser Tyr Gln Met His Gly Leu
 85 90 95
 Val Cys Val Asp Lys Arg Gln Arg Thr Leu Arg Pro Ala Ile Ile Trp
 100 105 110
 Cys Asp Ser Arg Ala Val Ser Tyr Gly Gln Arg Ala Phe Glu Ala Ile
 115 120 125
 Gly Glu Lys Phe Cys Leu Ala His Leu Leu Asn Ser Pro Gly Asn Phe
 130 135 140
 Thr Ala Ser Lys Leu Ala Trp Val Lys Glu Asn Glu Pro Asp Ile Tyr
 145 150 155 160
 Glu Gln Ile Asp Lys Ile Met Leu Pro Gly Asp Tyr Ile Ala Met Lys
 165 170 175
 Leu Ser Gly Glu Val Cys Thr Thr Ile Glu Gly Leu Ser Glu Gly Met
 180 185 190
 Phe Trp Asp Phe Arg Asn Asn Arg Pro Ala Asp Phe Leu Met Gln Tyr
 195 200 205
 Tyr Gly Ile Asp Pro Ser Leu Ile Ala Asp Ile Arg Pro Thr Phe Ala
 210 215 220
 Glu Gln Gly Arg Leu Thr Gly Thr Ala Ala Arg Glu Leu Gly Leu Gln
 225 230 235 240
 Glu Gly Thr Pro Ile Thr Tyr Arg Ala Gly Asp Gln Pro Asn Asn Ala
 245 250 255
 Leu Ser Leu Asn Val Phe Asn Pro Gly Glu Ile Ala Ser Thr Ala Gly
 260 265 270
 Thr Ser Gly Val Val Tyr Gly Val Asn Gly Glu Ile Asn Tyr Asp Pro
 275 280 285
 Gln Ser Arg Val Asn Thr Phe Ala His Val Asn His Thr Ala Ala Asp
 290 295 300
 Pro Arg Leu Gly Val Leu Leu Cys Ile Asn Gly Thr Gly Ile Leu Asn
 305 310 315 320

Ser Trp Ile Arg Arg Asn Val Ala Pro Glu Gly Ile Ser Tyr Ala Glu
 325 330 335
 Met Asn Arg Phe Ala Ser Ser Val Pro Ile Gly Ser Ala Gly Ile Ser
 340 345 350
 Ile Leu Pro Phe Gly Asn Gly Ala Glu Arg Met Leu Asp Asn Arg Ala
 355 360 365
 Thr Gly Cys Gly Ile His Gly Val Asp Phe Asn Arg His Asp Lys Ser
 370 375 380
 His Leu Ile Arg Ala Ala Gln Glu Gly Ile Val Phe Ser Phe Lys Tyr
 385 390 395 400
 Gly Ile Asp Ile Met Glu Glu Met Gly Ile Pro Val Lys Lys Ile His
 405 410 415
 Ala Gly His Ala Asn Met Phe Leu Ser Ser Val Phe Arg Glu Thr Leu
 420 425 430
 Ala Gly Thr Thr Gly Ala Thr Ile Glu Leu Tyr Asp Thr Asp Gly Ser
 435 440 445
 Val Gly Ala Ala Lys Gly Ala Gly Met Gly Ala Gly Ile Tyr Lys Asp
 450 455 460
 His Glu Glu Ala Phe Ala Thr Leu Asp Lys Leu Thr Val Val Glu Pro
 465 470 475 480
 Asp Ala Gly Lys Gln Gln Glu Tyr Thr Asp Ala Tyr Ala Arg Trp Lys
 485 490 495
 Gln Cys Leu Thr Gln Ser Met Gln Thr Glu Thr Glu Asn Lys
 500 505 510

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<212> PRT

<213> B.fragilis

<400> 5627

Ala Met Asn Lys Gln Met Thr Ile Ala Lys Lys Arg Tyr Ser Phe Lys
 1 5 10 15
 Lys Ala Tyr Glu Arg Val Pro Leu Gly Gln Ile Glu Ser Leu Lys Lys
 20 25 30
 Glu Leu Tyr Ser Val Phe Ser Ile Asn Asn Arg Thr Ser Trp Tyr Asn
 35 40 45
 Lys Leu Lys Gly Ile Thr Ser Pro Ser Ile Glu Val Val Glu Ala Val
 50 55 60
 Glu Thr Val Phe Leu Lys Tyr Gly Ile Glu Asn Cys Trp Glu Ile Thr
 65 70 75 80
 Glu Ile Lys Leu

<210> 5628

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<212> PRT

<213> B.fragilis

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Ser Glu Asp Asn Gln Ser His Ile Tyr Leu Leu Cys Phe Ser Arg Ser
 1 5 10 15
 Leu Thr Ala Gly Met His Ile Ile Lys Ile Glu Val Asn Thr Ile Ala
 20 25 30
 Ile Pro Gln Gln Ile Lys Ile Leu Ala Ile Pro Lys Leu Ser Ala Ile
 35 40 45
 Asn Pro Val Met Asn Asn Pro Met Ile Glu Gly Asn Lys Leu Thr Leu
 50 55 60
 Ser Lys Arg Glu Asn Thr Arg Pro Lys Tyr Ala Gly Leu Asn

75

<213> B.fragilis

[illegible]

<210> 5630
 <211> 355
 <212> PRT
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Leu	Lys	Ser	Lys	Lys	Gln	Val	Met	Lys	Lys	Phe	Phe	Arg	Phe	Gln	Leu
1				5					10					15	
Cys	Cys	Ile	Cys	Leu	Leu	Val	Leu	Ile	Val	Ser	Ala	Cys	Lys	Val	Lys
			20					25					30		
Arg	Pro	Asp	Ser	Val	Ile	Ser	Glu	Ser	Glu	Met	Glu	Asn	Leu	Leu	Tyr
		35					40					45			
Asp	Tyr	His	Ile	Ala	Lys	Ala	Met	Gly	Glu	Asn	Met	Pro	Gly	Gly	Glu
	50					55					60				
Asn	Tyr	Lys	Lys	Ala	Leu	Tyr	Val	Glu	Ala	Val	Phe	Lys	Lys	Tyr	Gly
65					70					75					80
Thr	Thr	Glu	Glu	Val	Phe	Asp	Ser	Ser	Met	Val	Trp	Tyr	Thr	Arg	Asn
				85					90					95	
Thr	Lys	Ile	Leu	Ser	Glu	Ile	Tyr	Glu	Lys	Val	Asn	Lys	Arg	Leu	Lys
			100					105					110		
Ala	Gln	Gln	Asn	Ala	Ile	Asn	His	Leu	Ile	Ala	Leu	Arg	Asp	Asn	Lys
			115				120					125			
Pro	Lys	Met	Ser	Ala	Pro	Gly	Asp	Ser	Ile	Asp	Val	Trp	Ala	Trp	Gln
		130				135					140				
Arg	Ile	Ala	Gln	Leu	Thr	Glu	Ala	Pro	Leu	Asn	Asn	Lys	Phe	Thr	Phe
145					150					155					160
Thr	Leu	Pro	Ser	Asp	Thr	Asn	Phe	Lys	Lys	Arg	Asp	Val	Leu	Leu	Trp
				165					170					175	
Lys	Met	Gln	Tyr	Asn	Phe	Leu	Ser	Glu	Ile	Pro	Asp	Ser	Thr	Met	Ala
			180					185					190		
Pro	Ile	Met	Ala	Met	Gln	Ile	Val	Tyr	Glu	Asn	Asp	Thr	Val	Thr	His
		195					200					205			
Ser	Cys	Val	Lys	His	Ile	Phe	Lys	Ser	Gly	Ile	Gln	Asn	Ile	Arg	Leu
	210					215					220				
Gln	Ser	Asp	Thr	Met	Asn	Ile	Lys	Glu	Ile	Lys	Gly	Phe	Ile	Phe	Cys
225					230					235					240
Pro	Leu	Ser	Glu	Glu	Ser	Ile	Thr	Leu	Leu	Val	Ser	Asp	Ile	Ser	Leu
			245						250					255	
Thr	Arg	Tyr	His	Ala	Asn	Asp	Ser	Ile	Thr	Gln	Ile	Gly	Arg	Asp	Ser
			260					265					270		
Leu	Lys	Thr	Asp	Ser	Ile	Lys	Glu	Lys	Ser	Lys	Asp	Asp	Ser	Ile	Gln
		275					280					285			
Lys	Lys	Thr	Pro	Lys	Asp	Thr	Ile	Gln	Ala	Ser	Ser	Pro	His	Gln	Arg
		290				295						300			
Thr	Asn	Pro	Asn	Asp	Leu	Asn	Arg	Pro	Asn	Asn	Asp	Val	Arg	Pro	Ile
305					310						315				320
Lys	Pro	Glu	Gln	Arg	Glu	Lys	Glu	Met	Gln	Ile	Glu	Lys	Glu	Lys	Gln
			325						330					335	
Gln	Leu	Glu	Arg	Gln	Gln	Arg	Thr	Asn	Pro	Arg	Arg	Pro	Leu	Arg	Arg
			340					345					350		
Gln	Asn	Asn													
		355													

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Leu Leu Ile Asn Gly Ser Arg Val Arg Val Pro Glu Gly Val Gln Lys
 1 5 10 15
 Glu Ile Ile Asn Asn Leu Leu Phe Val Phe Gly Gly Ile Leu Lys Tyr
 20 25 30
 Cys Phe Ile Phe Ala Thr Ala Lys Ile Asn Leu Met Lys Thr Thr Tyr
 35 40 45
 Gln Phe Asn Ile Leu Val Asn His Leu Glu Leu Ala
 50 55 60

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<400> 5632
 Tyr Ile Pro Asn Lys Gln Asp Ile Ser Leu Ile Ile Asn Ile Asn Phe
 1 5 10 15
 Ile Ile Met Asn Phe Asp Leu Lys Ala Phe Arg Lys Arg Phe Gly Leu
 20 25 30
 Lys Gln Val Glu Val Ala His Leu Phe Asn Cys Gly Gln Ser Asn Ile
 35 40 45
 Ser Asp Ile Glu Thr Gly Lys Arg Gly Leu Glu Glu Tyr Gln Thr Arg
 50 55 60
 Ile Leu Phe Asp Lys Tyr Gly Glu Glu Val Val Lys Glu Tyr Leu Ile
 65 70 75 80
 Pro Glu Ser Ala Ile His Gln Gly Asn Ile Asn Gly Asp Asn Ile Asn
 85 90 95
 Gly His Asn Val Thr Val Asn Lys Ala Asp Phe Asp Lys Leu Ile Ser
 100 105 110
 Leu Leu Asn Lys Arg Asp Glu Gln Ile Asp Arg Leu Leu Arg Ile Ile
 115 120 125
 Glu Asn Leu Asn Lys
 130

<210> 5633
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 <212> PRT
 <213> B.fragilis

<400> 5633
 Glu Arg Asn Asn Ile Met Thr Leu Lys Gln Ala Gln Lys Leu Tyr Asp
 1 5 10 15
 Asp Ser Val Gln Ala Lys Met Thr His Ala Asp Tyr Cys Met Thr Gln
 20 25 30
 Ser Gln Leu Glu Tyr Ile Gly Arg Thr Met Trp Gly Phe Thr Pro Asp
 35 40 45
 Lys Gln Ala Lys Val Leu Phe Thr Lys Val Gly Lys Arg Val Ser Val
 50 55 60
 Val Ile Ala Ser Arg Glu Ala Phe Ile Lys Glu Ile Gly Lys Pro Val
 65 70 75 80
 Ile Cys Lys Cys Ser Val Cys Asp Met Tyr Tyr Leu Ala Tyr Arg Lys
 85 90 95
 Ser Val Asp Ala His Asp Glu Leu Asn Ala Gln Cys Pro Lys Cys Asp
 100 105 110
 Ser Leu Gly Cys Asp Ser Asp Ile Val His Phe Glu Thr Ser Arg Lys
 115 120 125
 Phe Trp Leu Asn Glu Lys Ile Val Lys Ile Leu Thr Pro Asn Lys Asp
 130 135 140
 Pro Glu Arg Val Glu Ala Met Tyr Asp Ser Ala Pro Glu Asp Phe Pro

145		150		155		160									
Ala	Gln	Tyr	Glu	Met	Leu	Leu	Pro	Asp	Gly	Lys	Arg	Cys	Thr	Asp	Cys
				165					170					175	
Val	Arg	Cys	Ala	Thr	Cys	Cys	Ser	Val	Phe	Gly	Gln	Lys	Glu	Ser	Ala
			180						185				190		
Thr	Ile	Cys	Gln	Trp	His	Pro	Ser	Arg	Tyr	Ser	Ala	Gly	Glu		
		195					200					205			

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<213> B.fragilis

<400> 5634

His	Ser	Leu	Asn	Ser	Phe	Asn	His	Gln	Cys	Leu	Ile	Leu	Lys	Arg	Gln
1			5						10					15	
Asn	Met	Lys	Thr	Pro	Ser	Leu	Ile	Leu	Met	Thr	Ile	Ile	Leu	Cys	Asn
		20						25					30		
Leu	Ser	Ile	Pro	Ile	Asn	Ala	Gln	Ile	Leu	Thr	Ser	Arg	Gln	Gln	Lys
		35					40					45			
Glu	Asp	Phe	Asp	Thr	Leu	Tyr	Ser	Leu	Leu	His	Gln	Val	His	Pro	Asp
	50				55					60					
Leu	Phe	Val	Tyr	Gln	Thr	Gln	Lys	Glu	Phe	Glu	Lys	Lys	His	Asp	Ser
65				70					75					80	
Ile	Tyr	Ser	Ser	Leu	Asn	Lys	Glu	Arg	Asn	Leu	Ser	Asp	Phe	Tyr	Phe
			85					90					95		
Ile	Val	Ser	Pro	Phe	Val	Ala	Ser	Val	Lys	Asp	Gly	His	Thr	Asn	Phe
			100					105					110		
Thr	Ile	Pro	Ala	Thr	Gln	Asp	Arg	Ile	Thr	Tyr	Leu	Asn	Asn	Gly	Gly
		115				120						125			
Leu	Thr	Leu	Pro	Leu	Arg	Leu	Lys	Ile	Val	Glu	Asn	Lys	Ile	Leu	Val
	130				135					140					
Asp	Phe	Pro	Leu	Ile	Ser	Cys	Ser	Ile	Gln	Glu	Asn	Asp	Glu	Ile	Ile
145				150					155					160	
Cys	Met	Asn	Asn	Ile	Asn	Ser	Gln	Thr	Ile	Leu	Ser	Gln	Leu	Tyr	Leu
			165					170					175		
Leu	Leu	Gly	Ala	Glu	Lys	Gly	Asn	Ala	Ile	Lys	Glu	Asn	Gln	Leu	Thr
		180					185						190		
Ser	Tyr	Leu	Ser	Thr	Leu	Leu	Trp	Tyr	Lys	Tyr	Asn	Trp	Gly	Glu	Asn
	195					200					205				
Met	Ile	Leu	Gln	Leu	Lys	Glu	Glu	Lys	Arg	Tyr	Gly	Lys	Asn	His	Trp
	210				215						220				
Met	Val	Ser	Ala	Lys											
225															

<210> 5635

<211> 158

<212> PRT

<213> B.fragilis

<400> 5635

His	Ile	Val	Asn	Gln	Asn	Met	Asn	Thr	Asn	Asn	Ile	Gly	Gly	Val	
1			5					10					15		
Ile	Gln	Ala	Asp	Phe	Leu	Phe	Thr	Asp	Glu	Ile	Ser	Leu	Phe	Ser	Val
		20						25				30			
Ile	Asn	His	Ser	Ala	Val	Ile	Ser	Leu	His	Arg	Pro	Asn	Thr	Trp	Arg
		35				40						45			
Asn	Leu	Pro	Ile	Thr	Tyr	Met	Gly	Val	Ser	Pro	Asp	Val	Glu	Ala	Asp
	50					55						60			

Asp Thr Gln Ala Gly Thr Leu Tyr Lys Gln Thr Leu Thr Ile Arg Leu
 65 70 75 80
 Lys Arg Thr Gly Leu Thr Asp Ser Glu Leu His Ile Leu Arg Thr Ile
 85 90 95
 Asn Val Arg Gly Cys Val Val Arg Cys Lys Asp Ala Asn Gly Asn Ile
 100 105 110
 Arg Leu Tyr Gly Ser Lys Glu Tyr Pro Leu Leu Gly Thr Val Ile Glu
 115 120 125
 Lys Thr Gly Thr Lys Ala Ser Asp Leu Ser Gly Ile Glu Ala Thr Phe
 130 135 140
 Ser Gly Lys Gly Ala Tyr Pro Pro Leu Pro Val Thr Glu Leu
 145 150 155

<210> 5636
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 5636
 Lys Gly Ser Lys Met Gly Thr Gly Phe Thr Glu Tyr Glu Glu Ser Leu
 1 5 10 15
 Ile Gln Ala Ile Cys Ser Leu Tyr Tyr Ile Gln Thr Arg Thr Tyr Lys
 20 25 30
 Gln Gly Val Phe Ile Gly Met Ile Pro Lys Asn Thr Arg Ile Thr Leu
 35 40 45
 Asn Gly Ile Tyr Met Met Lys Leu Leu Asn Thr Gly Asn Ala Val Tyr
 50 55 60
 Ile Glu Val Lys Gly Gly Ile Asn Val Leu Thr Ile Ile His Gln Gln
 65 70 75 80

<210> 5637
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 5637
 Ile Met Pro Lys Lys Asp Thr Thr Tyr Asp Arg Ile Glu Arg Ser Leu
 1 5 10 15
 Phe Lys Asp Arg Gly Glu Ser Ala Leu Gln Leu Ser Pro Lys Glu Met
 20 25 30
 Glu Ile Lys Asn Arg Met Met Leu Cys Val Ser Lys Lys Met Glu Ser
 35 40 45
 Pro Leu Ile Glu Asp Gln Glu Leu Val Thr Phe Leu Met His Gly Cys
 50 55 60
 Gly Gly Gln Ala Glu Pro Val Ser Gln Ser Gln Ala Tyr Arg Asp Ile
 65 70 75 80
 Gly Met Ile Asn Arg Leu Val Gly Asn Ile Gln Leu Ala Ala Lys Ser
 85 90 95
 Trp Tyr Arg Tyr Met Ile Val Glu Gly Gly Lys Lys Ala Phe Gln Leu
 100 105 110
 Ala Ile Asp Asn Gly Asp Ala Lys Gly Ala Ala Ala Ala Leu Asp Lys
 115 120 125
 Ile Gly Lys Tyr Thr Arg Ser Asp Lys Asp Asp Ala Phe Asp Phe
 130 135 140
 Ser Gln Leu Ile Pro Pro Ser Phe Glu Pro Ser Asp Asp Val Thr Thr
 145 150 155 160
 Leu Glu Gly Ile Glu Val Ile Asp Asn Leu Glu Gln Arg Arg Gln Glu
 165 170 175
 Leu Arg Ser Leu Cys Lys Asp Met Leu Thr Lys Gln Ala Thr Asp Ile

180 185 190
 Gln Thr Ile Glu Glu Glu Asp Ile Glu Glu
 195 200

<210> 5638
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 5638
 Arg Thr Ala Lys Met Glu Asn Ile Phe Asp Ser Ala Lys Thr Ile Gln
 1 5 10 15
 Glu Lys Arg Thr Ile Leu Lys Gly Leu Ser Lys Pro Leu Gln Ile Leu
 20 25 30
 Val Lys Glu Ala Ala Ile Pro Thr Val Asn Asp Gly Leu Lys Ala Ile
 35 40 45
 Tyr Ala Gln Ser Gly His Thr Glu Leu Lys Thr Leu Lys Gln Trp Asn
 50 55 60
 Lys Glu Gly Arg Ser Ile Lys Lys Gly Ser His Ala Leu Cys Leu Trp
 65 70 75 80
 Gly Ala Pro Lys Lys Val Glu Thr Thr Gln Val Glu Glu Ala Gln Gly
 85 90 95
 Glu Asp Asn Asp Pro Met Asn Phe Tyr Pro Ile Cys Phe Val Phe Ser
 100 105 110
 Asn Leu Gln Val Tyr Glu Lys Gln
 115 120

<210> 5639
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 5639
 Ile Ala Gln Asn Cys Ile Leu Tyr Ala Gln Cys Ile Asn Arg Thr Lys
 1 5 10 15
 Thr Tyr His Val Ser Tyr Gly Tyr Lys Pro Ile Ile Ile Asn Thr Leu
 20 25 30
 Cys Asp Lys Thr Ala Gln Phe Thr Gln Leu His Lys Lys Gly Val Pro
 35 40 45
 Phe Leu Gln Gly Gly Leu Val Cys Ser Gly Lys Ser Cys Leu Cys Pro
 50 55 60

<210> 5640
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 5640
 Thr Ile Lys Asn Thr Ile Thr Met Lys Lys Ile Ile Leu Leu Leu Ala
 1 5 10 15
 Leu Cys Phe Thr Ala Asn Asn Phe Phe Ala Gln Thr Thr Asp Pro Asn
 20 25 30
 Gln Leu Lys Asn Glu Gly Asn Asp Ala Leu Asn Ala Lys Asn Tyr Ala
 35 40 45
 Val Ala Phe Glu Lys Tyr Ser Glu Tyr Leu Lys Leu Thr Asn Asn Gln
 50 55 60
 Asp Ser Val Thr Ala Tyr Asn Cys Gly Val Cys Ala Asp Asn Ile Lys
 65 70 75 80
 Lys Tyr Lys Glu Ala Ala Asp Tyr Phe Asp Ile Ala Ile Lys Lys Asn

85 90 95
 Tyr Asn Leu Ala Asn Ala Tyr Ile Gly Lys Ser Ala Ala Tyr Arg Asp
 100 105 110
 Met Lys Asn Asn Gln Glu Tyr Ile Ala Thr Leu Thr Glu Gly Ile Lys
 115 120 125
 Ala Val Pro Gly Asn Ala Thr Ile Glu Lys Leu Tyr Ala Ile Tyr Tyr
 130 135 140
 Leu Lys Glu Gly Gln Lys Phe Gln Gln Ala Gly Asn Ile Glu Lys Ala
 145 150 155 160
 Glu Glu Asn Tyr Lys His Ala Thr Asp Val Thr Ser Lys Lys Trp Lys
 165 170 175
 Thr Asp Ala Leu Tyr Ser Leu Gly Val Leu Phe Tyr Asn Asn Gly Ala
 180 185 190
 Asp Val Leu Arg Lys Ala Thr Pro Leu Ala Ser Ser Asn Lys Glu Lys
 195 200 205
 Tyr Ala Ser Glu Lys Ala Lys Ala Asp Ala Ala Phe Lys Lys Ala Val
 210 215 220
 Asp Tyr Leu Gly Glu Ala Val Thr Leu Ser Pro Asn Arg Thr Glu Ile
 225 230 235 240
 Lys Gln Met Gln Asp Gln Val Lys Ala Met Ile Lys
 245 250

<210> 5641
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 5641
 Asn Met Lys Lys Lys Lys Glu Thr Pro Met His Pro Val Val Glu Asn
 1 5 10 15
 Ile Arg Lys Ile Ile Met Asp Lys Gly Ile Thr Gln Val Ala Ala Ser
 20 25 30
 Glu Leu Val Gly Thr Ser Ala Ser Gln Met Ser Lys Ile Leu Asn Gly
 35 40 45
 Glu Val Gln Ile Ser Ile Trp Gln Ile Ser Asn Phe Ala Thr Asn Leu
 50 55 60
 Gly Met Glu Ile Ile Asp Val Phe Thr Tyr Pro Asn Lys Tyr Val Lys
 65 70 75 80
 Ala Glu Asp Arg Asn Asp Asn Lys Glu Pro Ile Glu Ala Val Leu Gln
 85 90 95
 Ile Lys Leu Arg Lys Asp Lys Lys Asp Gln Val Leu Lys Leu Ile Phe
 100 105 110
 Gly Glu His Asn Leu Glu Ile Leu Asn Lys
 115 120

<210> 5642
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 5642
 Thr Ile Arg Lys Glu Gly Cys Leu Met Ala Val Tyr Asn Arg Ile Pro
 1 5 10 15
 Asp Arg Phe Thr Asn Leu Asp Ile Arg Asp Thr Leu Asn Ala Tyr Gly
 20 25 30
 Gly Ser Val Gly Asp Asn Ser Leu Asn Tyr Phe Ser Ala Ala Ala His
 35 40 45
 Ile Asn Met Trp Ser Lys Arg Lys Pro Val Lys Arg Asn Ile Met Phe
 50 55 60

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Asn Thr Glu Asp Pro Asn Trp Phe Arg Ala Asp Ser Gly Asn Tyr Gly
65      70      75      80
Ile Asn Val Pro Arg Ala Ala Asp Ile Ala Leu Leu Thr Gly Thr Tyr
      85      90      95
Thr Tyr Asp Ile Pro Val Gln Gly Ser Tyr Asn Leu Arg Val Gly Asp
      100      105      110
Phe Ala Gly Tyr Asn Pro Glu Ala Thr Val Pro Phe Thr Thr Met Leu
      115      120      125
Pro Ser Gly Leu Ile Leu Ala Ser Gly Ser Ala Thr Val Val Lys Leu
      130      135      140
Met Leu Lys Ser Leu Asp Ser Thr Tyr Asn Val Val Pro Ala Asp Ile
145      150      155      160
Phe Pro Ser Asn Ser Tyr Leu Gly Cys Ala Val Thr Tyr Gly Asn Arg
      165      170      175
Thr Leu Ile Lys Thr Leu Ser Val Thr Ile Phe Asn Gly Gly Val Thr
      180      185      190
Leu Asn Ile Ser Asp Cys Glu Leu Leu Lys Ser Asp Lys Thr Gly Val
      195      200      205
Arg Ile Lys Val Phe Ile Cys Thr Ser Gln Val Pro Ser Trp Gln Gly
      210      215      220
Glu Thr Thr Gln Ser Tyr Ser Leu Asn Ala Glu Asp Gly Phe Asp
      225      230      235      240
Glu Ser Thr Val Asp Ile Val Thr Pro His Ala Asp Val Tyr Ser Phe
      245      250      255
Gly Ile Leu Gly Leu Ser Ile Ile Glu Ala Arg Lys Ile Ser Leu Ile
      260      265      270
Gly Thr Ala Ile Ile Asn Ser Gly Ser Leu Phe Gln Glu Gly Arg Leu
      275      280      285
Ile Ser Arg Leu Asp Asn Asn Tyr Tyr Leu Lys Ser Val Lys Val Val
      290      295      300
Ala Thr Arg Ala Ser Asp Gly Val Thr Val Ala Glu Lys Ala Gln Ser
      305      310      315      320
Ile Thr Ser Ser Thr Thr Pro Thr Arg Leu Gly Asn Asp Trp Met Ala
      325      330      335
Gly Glu Ser Val Asn Phe Arg Thr Pro Val Ser Arg Ser Ser Pro Gly
      340      345      350
Ala Gly Gly Glu His Val Val
      355

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<210> 5643

<211> 83

<212> PRT

<213> B.fragilis

<400> 5643

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Thr Leu Gly Asn Thr Gly Phe Thr Glu Arg Gln Phe Leu Asn Asn Ser
1      5      10      15
Phe Phe Asn Leu Ser Asn Tyr Lys Leu Lys Val Met Ser Arg Arg Arg
      20      25      30
Gln Leu Glu His Glu Val Ser Leu Ala Gln Glu Arg Ile Lys Lys Ala
      35      40      45
Pro Lys Asp Thr Pro Lys Glu Ile Leu Lys Thr Trp Glu Gln Glu Leu
      50      55      60
Val Asp Leu Glu Leu Glu Leu Asn Asn Leu Val Asp Asp Glu Glu Asp
65      70      75      80
Asn Asn Glu

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<210> 5644

<211> 331
 <212> PRT
 <213> B.fragilis

<400> 5644

Asn	Arg	Leu	Lys	Asn	Ile	Leu	Ser	Ile	Ala	Gln	Phe	His	Gln	Ile	Cys
1				5					10					15	
Ala	Met	Ile	Leu	Gln	Lys	Tyr	Ile	Thr	Leu	His	Pro	Gln	Ile	Lys	Leu
			20					25					30		
Lys	Asn	Lys	Asn	Met	Lys	Ala	Phe	Val	Phe	Pro	Gly	Gln	Gly	Ala	Gln
		35				40					45				
Phe	Val	Gly	Met	Gly	Lys	Asp	Leu	Tyr	Glu	Thr	Ser	Ala	Leu	Ala	Lys
	50				55				60						
Glu	Leu	Phe	Glu	Lys	Ala	Asn	Asp	Ile	Leu	Gly	Tyr	Arg	Ile	Thr	Asp
65				70					75					80	
Ile	Met	Phe	Asn	Gly	Thr	Asp	Glu	Asp	Leu	Arg	Gln	Thr	Lys	Val	Thr
			85					90					95		
Gln	Pro	Ala	Val	Phe	Leu	His	Ser	Val	Ile	Ser	Ala	Leu	Cys	Met	Gly
		100					105						110		
Asp	Asp	Phe	Lys	Pro	Glu	Met	Thr	Ala	Gly	His	Ser	Leu	Gly	Glu	Phe
	115					120						125			
Ser	Ala	Leu	Val	Ala	Ala	Gly	Ala	Leu	Ser	Phe	Glu	Asp	Gly	Leu	Lys
	130				135					140					
Leu	Val	Tyr	Ala	Arg	Ala	Met	Ala	Met	Gln	Lys	Ala	Cys	Glu	Ala	Thr
145				150					155					160	
Pro	Ser	Thr	Met	Ala	Ala	Ile	Ile	Ala	Leu	Pro	Asp	Glu	Lys	Val	Glu
			165					170						175	
Glu	Ile	Cys	Ala	Ser	Val	Thr	Ala	Glu	Gly	Glu	Val	Cys	Val	Pro	Ala
		180					185					190			
Asn	Tyr	Asn	Cys	Pro	Gly	Gln	Ile	Val	Ile	Ser	Gly	Ser	Val	Pro	Gly
	195				200						205				
Ile	Glu	Lys	Ala	Cys	Glu	Leu	Met	Lys	Ala	Ala	Gly	Ala	Lys	Arg	Ala
	210				215						220				
Leu	Pro	Leu	Lys	Val	Gly	Gly	Ala	Phe	His	Ser	Pro	Leu	Met	Asp	Pro
225				230					235					240	
Ala	Lys	Val	Glu	Leu	Glu	Ala	Ala	Ile	Asn	Ala	Thr	Glu	Phe	His	Thr
		245						250						255	
Pro	Lys	Cys	Pro	Val	Tyr	Gln	Asn	Val	Asp	Ala	Leu	Pro	His	Thr	Asp
		260					265						270		
Pro	Gln	Glu	Ile	Lys	Lys	Asn	Leu	Val	Ala	Gln	Leu	Thr	Ala	Ser	Val
	275					280						285			
Arg	Trp	Thr	Gln	Thr	Val	Lys	Asn	Met	Val	Ala	Asp	Gly	Ala	Thr	Asp
	290				295						300				
Phe	Thr	Glu	Cys	Gly	Pro	Gly	Ala	Val	Leu	Gln	Gly	Leu	Ile	Lys	Lys
305				310					315					320	
Ile	Asp	Ser	Thr	Val	Ser	Ala	His	Gly	Ile	Ala					
			325					330							

<210> 5645
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 5645

Cys	Ile	Met	Lys	Asn	Leu	Glu	Ile	Leu	Pro	Leu	Ser	Ala	Glu	Ser	Lys
1				5					10					15	
Lys	Arg	Ile	Glu	Glu	Phe	Ala	Arg	Gln	Tyr	Gln	Arg	Tyr	Ala	His	Ile
		20						25				30			
Ala	Ile	Glu	Ile	Val	Ser	Tyr	Ser	Glu	Gly	Arg	Leu	Ile	Val	Arg	Ala

35	40	45
Glu Gln Lys Asp Leu Val Asn Asp Lys Phe Leu Ser Lys Lys Glu Leu		
50	55	60
Thr Glu Arg Val Arg Asp Met Phe Lys Asp Glu Ile Pro Glu Asp Trp		
65	70	75
Lys Leu Thr Val Ser Ala Val Asn Phe Asp Arg Lys Asp Ile Asp Gly		
85	90	95
Ile Thr Leu Asp Trp Ile Lys Lys Arg Met Glu Arg Leu Gly Leu Lys		
100	105	110
Asn Lys His Leu Ser Asn Tyr Thr Gly Ile Asp Lys Cys Thr Val Ser		
115	120	125
Ser Ile Leu Ser Gly Asp Lys Glu Leu Thr Lys Trp His Lys Val Ala		
130	135	140
Leu Tyr Tyr Phe Phe Lys Tyr Tyr Glu Val Ala Asn Phe		
145	150	155

<210> 5646
 <211> 111
 <212> PRT
 <213> B.fragilis

<400> 5646
His Thr Met Asn Leu Ser Ser Phe Lys Leu Thr Asn Ile Asn Glu Leu
1 5 10 15
Ile Ser Val Tyr Lys Glu Asn Pro Glu Arg Phe Asn Arg Phe Tyr Asn
20 25 30
Ala Val Tyr Leu Leu Leu Asp Gly Ile Pro Glu Cys Gly Ser Ile Arg
35 40 45
Val Met Asp His Cys Glu Ala Ser Ser Tyr Asp Leu Phe Ile Lys Cys
50 55 60
Ala Cys Trp Ile Ile Gln Glu Glu Thr Glu Gln Lys Glu Leu Thr Asp
65 70 75 80
Ala Leu Leu Glu Phe Ser Asp Asp Tyr Thr Ile Ile Arg Arg Cys Ala
85 90 95
Lys Phe Val Lys Ser Lys Ser Trp Val His Phe Tyr Ser Arg Arg
100 105 110

<210> 5647
 <211> 439
 <212> PRT
 <213> B.fragilis

<400> 5647
Lys Asn Met Lys Ile Ala Ile Val Gly Thr Gly Tyr Val Gly Leu Val
1 5 10 15
Thr Gly Thr Cys Phe Ala Glu Ile Gly Val Asp Val Thr Cys Val Asp
20 25 30
Thr Asn Ser Glu Lys Ile Glu Ala Leu Lys Lys Gly Ile Ile Pro Ile
35 40 45
Tyr Glu Asn Gly Leu Glu Glu Met Val Ile Arg Asn Thr Lys Ala Gly
50 55 60
Arg Leu Lys Phe Thr Thr Ser Leu Glu Ser Cys Leu Asp Asp Val Glu
65 70 75 80
Val Val Phe Ser Ala Val Gly Thr Pro Pro Asp Glu Asp Gly Ser Ala
85 90 95
Asp Leu Ser Tyr Val Leu Ala Val Ala Arg Thr Ile Gly Gln Asn Met
100 105 110
Lys Lys Tyr Lys Leu Val Val Thr Lys Ser Thr Val Pro Val Gly Thr
115 120 125

Ala Cys Lys Val Arg Asn Ala Ile Gln Glu Glu Leu Asp Lys Arg Gly
 130 135 140
 Ala Lys Ile Glu Phe Asp Val Ala Ser Asn Pro Glu Phe Leu Lys Glu
 145 150 155 160
 Gly Asn Ala Val Asn Asp Phe Met Ser Pro Asp Arg Val Val Ile Gly
 165 170 175
 Val Glu Ser Glu Arg Ala Glu Lys Leu Met Thr Lys Leu Tyr Lys Pro
 180 185 190
 Phe Met Leu Asn Asn Phe Arg Val Ile Phe Met Asp Ile Pro Ser Ala
 195 200 205
 Glu Met Thr Lys Tyr Ala Ala Asn Ser Met Leu Ala Thr Arg Ile Ser
 210 215 220
 Phe Met Asn Asp Ile Ala Asn Leu Cys Glu Leu Val Gly Ala Asp Val
 225 230 235 240
 Asn Met Val Arg Ser Gly Ile Gly Ser Asp Thr Arg Ile Gly Arg Lys
 245 250 255
 Phe Leu Tyr Pro Gly Ile Gly Tyr Gly Gly Ser Cys Phe Pro Lys Asp
 260 265 270
 Val Lys Ala Leu Ile Lys Thr Ala Glu Gln Asn Gly Tyr Gln Met Arg
 275 280 285
 Val Leu Gln Ala Val Glu Glu Val Asn Glu Asn Gln Lys Ser Leu Leu
 290 295 300
 Phe Asp Lys Leu Val Lys Gln Tyr Asn Gly Asn Leu Glu Gly Lys Thr
 305 310 315 320
 Val Ala Leu Trp Gly Leu Ala Phe Lys Pro Glu Thr Asp Asp Met Arg
 325 330 335
 Glu Ala Pro Ala Leu Val Leu Ile Asp Lys Leu Leu Lys Ala Gly Cys
 340 345 350
 Lys Val Arg Ala Tyr Asp Pro Ala Ala Ala Asn Glu Cys Lys Arg Arg
 355 360 365
 Ile Gly Glu Thr Ile Tyr Tyr Ala Arg Asp Met Tyr Asp Ala Val Leu
 370 375 380
 Asp Ala Asp Ala Leu Met Leu Val Thr Glu Trp Lys Glu Phe Arg Leu
 385 390 395 400
 Pro Ser Trp Ala Val Val Lys Lys Thr Met Ser Gln Gln Val Val Met
 405 410 415
 Asp Gly Arg Asn Ile Tyr Asp Lys Lys Glu Met Glu Glu Gln Gly Phe
 420 425 430
 Ile Tyr His Cys Ile Gly Lys
 435

<210> 5648
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 5648
 Asn Lys Met Lys Asn Val Ser Ser Ala Lys Ser Ala Glu Ala Lys Ala
 1 5 10 15
 Val Val Leu Ser Asn Val Ala Asn Lys Lys Asn Glu Thr Ala Pro Leu
 20 25 30
 Ile Val Leu Pro Ser Leu Pro Thr Glu Lys Glu Glu Thr Lys Glu Gln
 35 40 45
 Val Ser Ala Lys Val Glu Thr Pro Val Gln Thr Ser Lys Lys Glu Ser
 50 55 60
 Ser Ser Val Val Ala Ala Pro Asn Lys Arg Leu Ser Ile Asp Glu Leu
 65 70 75 80
 Thr Asp Lys Ala Glu Arg Val Tyr Leu Leu Arg Gln Lys Tyr Gln Glu
 85 90 95

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Val Arg Glu Lys Arg Lys Gln Leu Glu Ser Phe Thr Ile Ser His Asp
      100      105      110
Lys Asn Asn Ala Gln Leu Thr Leu Val Asp Ala Lys Gly Leu Ser Ile
      115      120      125
Ser Thr Ser Asn Pro Val Ala Ile Gly Lys Leu Leu Ser Asp Trp Met
      130      135      140
Leu Asp Leu Asn Asn His Leu Ala Lys Thr Glu Glu Glu Ile Arg Ser
145      150      155      160
Glu Leu Glu Arg Leu Asn
      165

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<210> 5649
<211> 82
<212> PRT
<213> B.fragilis

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<400> 5649
Lys Glu Met Asn Ser Asp Gly Asn Lys Ile Leu Asp Ala Ile Lys Arg
1      5      10      15
Met Ala Ala Asp Asp Asn Lys Gly Leu Arg Met Thr Thr Thr Ile Val
      20      25      30
Asp Val Lys Asp Asp Pro Leu Gly Ser Ile Val Gly Phe Gly Thr Glu
      35      40      45
Lys Val Cys Gly Asp Asp Ala Phe Ala Gln Thr Met Gly Leu Pro Gly
      50      55      60
Lys Tyr Met Ala Cys Ala Phe Phe Ile Asp Arg Glu Glu Leu Lys Lys
65      70      75      80
Tyr Leu

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<210> 5650
<211> 174
<212> PRT
<213> B.fragilis

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<400> 5650
Leu Lys Pro Asn Tyr Met Arg His Val Lys Trp Ile Phe Val Val Leu
1      5      10      15
Leu Ile Ser Ser Leu Thr Ser Phe Val Glu Lys Asp Lys Pro Thr Gly
      20      25      30
Gly Leu Asn Val Gly Asp Val Ala Pro Asp Phe Thr Ile Glu Ser Thr
      35      40      45
Ser Asp Ala Gln Tyr Asn Phe Asp Leu Thr Asp Leu Lys Gly Lys Tyr
      50      55      60
Val Leu Leu Ser Phe Trp Ala Ser Tyr Asp Ala Gln Ser Arg Met Gln
65      70      75      80
Asn Ala Ser Leu Ser Asn Ala Leu Arg Ser Thr Ser Gln Asp Val Glu
      85      90      95
Met Val Ser Val Ser Phe Asp Glu Tyr Gln Ser Val Phe Gln Glu Thr
      100      105      110
Ile Arg Lys Asp Gln Ile Val Thr Pro Thr Cys Phe Ala Glu Thr Lys
      115      120      125
Gly Glu Ser Ser Gly Leu Phe Lys Lys Tyr Arg Leu Asn Arg Gly Phe
      130      135      140
Thr Asn Tyr Leu Leu Asp Gly Asn Gly Val Ile Ala Lys Asn Ile
145      150      155      160
Ser Ala Ala Glu Leu Ser Ala Tyr Ala Asn Lys Ile Lys Gly
      165      170

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<210> 5651
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 5651

Tyr	His	Gln	Lys	Arg	Met	Asn	Tyr	Ile	Gln	Thr	Glu	Ile	Asp	Gly	Val
1				5					10					15	
Trp	Ile	Ile	Glu	Pro	Lys	Ile	Phe	Phe	Asp	Pro	Arg	Gly	Tyr	Phe	Met
			20					25					30		
Glu	Ala	Phe	Lys	Gln	Gln	Glu	Phe	Asp	Ala	Thr	Ile	Gly	Gln	Ile	Asn
		35					40					45			
Phe	Ile	Gln	Asp	Asn	Glu	Ser	Gln	Ser	Ser	Phe	Gly	Thr	Leu	Arg	Gly
		50				55					60				
Leu	His	Tyr	Gln	Lys	Gly	Ala	Tyr	Ser	Gln	Ala	Lys	Leu	Val	Arg	Val
65					70					75				80	
Ile	Lys	Gly	Glu	Val	Leu	Asp	Val	Ala	Val	Asp	Leu	Arg	Lys	Ser	Ser
				85					90					95	
Pro	Thr	Phe	Gly	Lys	His	Ile	Ser	Val	Leu	Leu	Ser	Asp	Glu	Asn	Lys
			100					105					110		
Arg	Gln	Leu	Phe	Ile	Pro	Arg	Gly	Phe	Ala	His	Gly	Phe	Leu	Val	Lys
		115					120					125			
Ser	Glu	Ile	Ala	Ile	Phe	Thr	Tyr	Lys	Val	Asp	Asn	Ile	Tyr	Ala	Pro
		130				135					140				
Gln	Ser	Glu	Ala	Ser	Ile	Leu	Tyr	Asn	Asp	Pro	Ala	Leu	Ala	Ile	Asp
145					150					155				160	
Trp	Pro	Ile	Ala	Asp	Ser	Gln	Leu	Val	Met	Ser	Glu	Lys	Asp	Lys	Gln
				165					170					175	
Ala	Gly	Ala	Phe	Arg	Glu	Ala	Glu	Tyr	Phe	Glu					
			180					185							

<210> 5652
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 5652

Gly	Asp	Lys	Asn	Met	Glu	Ser	Lys	Phe	His	Glu	Leu	Lys	Asn	Arg	Leu
1				5					10					15	
Leu	Lys	Asn	Ile	Asp	Gln	Thr	Ser	Glu	Ser	Arg	Leu	Tyr	Met	Asp	Ile
			20					25					30		
Gln	Leu	Ala	Gln	Asn	Cys	Glu	Thr	Leu	Met	Ser	Ile	Ile	Lys	Lys	Asp
		35					40					45			
Ile	Gly	Tyr	Leu	Ala	Lys	Glu	Gly	Ile	Leu	Ser	Pro	Gly	Ile	Ala	Glu
		50				55					60				
Asp	Phe	Lys	Asp	Val	Phe	Leu	Ser	Ala	Gly	Ile	Lys	Cys	Asn	Ser	Gly
65					70					75				80	
Gly	Ser	Ser	Gly	Tyr	Met	Leu	Ile	Trp	Asp	Gly	Thr	Ala	Val	Asp	Ile
				85					90					95	
Ser	Gly	Thr	Ala	Thr	Ala	Val	Ile	Trp	Lys	Ser	Glu	Arg	Ala	Phe	Ile
			100					105					110		
Lys	Gly	Arg	Ala	Cys	Ala	Phe	Leu	Leu	Gly	Glu	Val	Ser	Ala	Ile	Thr
		115					120					125			
Cys	Glu	Arg	Ser	Met	Val	Ile	Ala	Ala	Gly	Ser	Ser	Thr	Ile	Leu	Ala
		130				135					140				
Glu	Gly	Asp	Ser	Val	Val	Gly	Val	Ser	Gly	Tyr	His	Ala	Ser	Val	Lys
145					150					155				160	
Ala	Ser	Asp	Tyr	Ala	Thr	Val	Val	Asn	Met	Asn	Cys	Pro	Asn	Ile	Asp
				165					170					175	

Leu Arg Asp Asn Thr Arg Leu Trp Leu Pro Ala Arg Gly Ser Phe Ala
 180 185 190
 Ala Arg Lys Asn Cys Asp Ile Ile Ile Lys Asn Lys Glu Glu
 195 200 205

<210> 5653
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 5653
 Pro Lys Lys Lys Glu Gly Lys Pro Met Phe Lys Asp Ile Ile Glu Leu
 1 5 10 15
 Asp Lys Gln Val Val Asp Arg Ile Val Asp Lys Val His Glu Asn Asn
 20 25 30
 Leu Glu Ile Glu Met Glu Met Gly Val Val Lys Asp Gly Met Val Lys
 35 40 45
 Val Leu Phe Leu Tyr Lys Asp Pro Glu Leu Leu Gln Ser Val Ile Asn
 50 55 60
 Glu Ser Val Thr Glu Glu Tyr Asp Leu Pro
 65 70

<210> 5654
 <211> 228
 <212> PRT
 <213> B.fragilis

<400> 5654
 Thr Glu Lys Asn Asp Thr Met Ser Asn Ile Pro Val Ile Phe Arg Phe
 1 5 10 15
 Leu Lys Asp Leu Thr Ala Asn Asn Asn Arg Glu Trp Phe Asn Glu His
 20 25 30
 Arg Glu Glu Tyr Glu Ile Ala Arg Leu Glu Phe Glu Asn Phe Leu Ser
 35 40 45
 Thr Val Ile Ala Arg Ile Ser Leu Phe Asp Glu Ser Ile Arg Gly Ile
 50 55 60
 Gln Pro Lys Glu Cys Thr Tyr Arg Ile Tyr Arg Asp Thr Arg Phe Ser
 65 70 75 80
 Ser Asp Lys Thr Pro Tyr Lys Asn His Phe Gly Gly Tyr Ile Asn Ala
 85 90 95
 Lys Gly Lys Lys Ser Tyr His Ser Gly Tyr Tyr Ile His Ile Gln Pro
 100 105 110
 Glu Gly Cys Met Leu Ala Gly Gly Ser Leu Cys Leu Pro Ser Asn Ile
 115 120 125
 Leu Lys Ala Leu Arg Gln Ser Ile Tyr Asp Asn Ile Asp Glu Tyr Arg
 130 135 140
 Ser Ile Val Glu Asp Pro Glu Phe Gln Gln Phe Phe Pro Ile Val Gly
 145 150 155 160
 Glu Asp Phe Leu Lys Thr Ala Pro Lys Gly Phe Pro Lys Asp Phe Lys
 165 170 175
 Tyr Ile Asp Tyr Leu Lys Pro Lys Glu Phe Thr Cys Ala Tyr Ser Val
 180 185 190
 Pro Asp Ser Phe Phe Leu Thr Pro Asp Ile Leu Asp Lys Ile Glu Glu
 195 200 205
 Val Phe Arg Gln Phe Lys Arg Phe Ala Asp Phe Thr Asn Phe Thr Ile
 210 215 220
 Asp Asp Phe Glu
 225

<210> 5655
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 5655

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Leu Arg Glu Asn Met Lys Arg Phe Ala Ala His Tyr Leu Phe Val Pro
1          5          10          15
Gly Ser Gly Phe Leu Lys Gln Tyr Ala Ile Glu Ile Glu Gly Gly Tyr
          20          25          30
Ile Cys His Ile Phe Pro Phe Ser Glu Glu Ile Glu Ser Val Glu Trp
          35          40          45
Phe Pro Gly Val Ile Leu Leu Thr Pro Gln Glu Glu Ser Asp Ile Asn
          50          55          60
Thr Leu Phe Asn Phe Thr Asn Ile Glu Lys Gln Ser Ile Tyr Ile Pro
65          70          75          80
Lys Val Thr Ile Asp Met Lys Trp Arg Ala Tyr Leu Leu Tyr Pro Phe
          85          90          95
Asn Phe Val Thr Met Gln Pro Val Ala Glu Thr Leu His Arg Gln Leu
          100          105          110
Gln

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<210> 5656
 <211> 357
 <212> PRT
 <213> B.fragilis

<400> 5656

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Arg Glu Arg Lys Asp Met Glu Ile Ile Lys Thr Gly Leu Ala Ala Phe
1          5          10          15
Gly Met Ser Gly Gln Val Phe His Ala Pro Phe Ile Ser Thr Asn Pro
          20          25          30
His Phe Glu Leu Tyr Lys Ile Val Glu Arg Ser Lys Glu Leu Ser Lys
          35          40          45
Glu Arg Tyr Pro Gln Ala Ser Ile Val Arg Ser Phe Lys Glu Leu Thr
          50          55          60
Glu Asp Pro Glu Ile Asp Leu Ile Val Val Asn Thr Pro Asp Asn Thr
65          70          75          80
His Tyr Glu Tyr Ala Gly Met Ala Leu Glu Ala Gly Lys Asn Val Val
          85          90          95
Val Glu Lys Pro Phe Thr Ser Thr Thr Lys Gln Gly Glu Glu Leu Ile
          100          105          110
Ala Leu Ala Lys Lys Lys Gly Leu Met Leu Ser Val Tyr Gln Asn Arg
          115          120          125
Arg Trp Asp Ala Asp Phe Leu Thr Val Arg Asp Ile Leu Ala Lys Ser
          130          135          140
Leu Leu Gly Arg Leu Val Glu Tyr Glu Ser Thr Phe Ala Arg Tyr Arg
145          150          155          160
Asn Phe Ile Lys Pro Asn Thr Trp Lys Glu Thr Gly Glu Ser Gly Gly
          165          170          175
Gly Leu Thr Tyr Asn Leu Gly Ser His Leu Ile Asp Gln Ala Ile Gln
          180          185          190
Leu Phe Gly Met Pro Glu Ala Val Phe Ala Asp Leu Gly Ile Leu Arg
          195          200          205
Glu Gly Gly Lys Val Asp Asp Tyr Phe Ile Ile His Leu Leu His Pro
210          215          220
Ser Leu Ala Pro Asn Val Lys Ile Thr Leu Lys Ala Ser Tyr Leu Met
225          230          235          240

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Arg Glu Ala Glu Pro Arg Phe Ala Leu His Gly Thr Leu Gly Ser Tyr
 245 250 255
 Val Lys Tyr Gly Val Asp Lys Gln Glu Ala Ala Leu Leu Ala Gly Glu
 260 265 270
 Ile Pro Glu Arg Pro Asn Trp Gly Glu Glu Ser Glu Gln Glu Trp Gly
 275 280 285
 Leu Leu His Thr Glu Ile Asn Gly Lys Glu Ile Cys Arg Lys Tyr Pro
 290 295 300
 Gly Ile Ala Gly Asn Tyr Gly Gly Phe Tyr Gln Asn Ile Tyr Glu His
 305 310 315 320
 Leu Cys Leu Gly Gln Pro Leu Glu Thr His Ala Gln Asp Ile Leu Asn
 325 330 335
 Val Ile Arg Ile Ile Glu Ala Ala Tyr Gln Ser His Arg Asp Asn Lys
 340 345 350
 Ile Val Asn Leu Lys
 355

<210> 5657
 <211> 181
 <212> PRT
 <213> B.fragilis

<400> 5657
 Ile Ile Asn Leu Asn Met Thr Ala Lys Phe Ile Ile Met Val Leu Val
 1 5 10 15
 Leu Ala Tyr Ile Met Val Ile Ile Ala Ile Ser Ile Tyr Leu Ile Lys
 20 25 30
 Ile Ile Cys Thr Arg Tyr Asn Gln Asn Ser Asp Gln Ile Leu Pro Pro
 35 40 45
 Pro Asn Met His Ser Ile Gln Glu Ser Ala Ser Met His Leu Val Arg
 50 55 60
 Ile Gly Gln Leu Pro His Pro Gly Pro Gly Tyr Cys Tyr Tyr Glu Leu
 65 70 75 80
 Gly Gly Met Arg Tyr Gln Ala Leu Thr Gly Phe Asp Ile Gly Val His
 85 90 95
 Glu Gly Tyr Ala Lys Ala Glu Leu Asn Asn Arg Tyr Asp Lys Tyr Ala
 100 105 110
 Val Gly Val Tyr Arg Glu Gly Asp His Lys Leu Met Gly Tyr Val Arg
 115 120 125
 Arg Glu Gln Asn Arg Glu Leu Tyr Glu Phe Met Leu Asn Asn Asn Cys
 130 135 140
 Ile Ala Lys Ala Lys Phe Arg Ile Trp Ile His Gln Gly Glu Ile Tyr
 145 150 155 160
 Gly Ala Ala Tyr Ile Lys Glu Glu Trp Lys Ser Ser Leu Gly Phe Lys
 165 170 175
 Ser Asp Ile Lys Ile
 180

<210> 5658
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 5658
 Lys Leu Ile Glu Met Leu Asn Glu Lys Arg Thr Gln Arg Ile Met Lys
 1 5 10 15
 Ser Lys Phe Leu Ile Phe Leu Ser Ala Val Ala Met Leu Leu Phe
 20 25 30
 Ser Asn Cys Gly Ser Lys Thr Thr Ser Asn Asp Gln Ala Thr Thr Glu

35	40	45
Val Lys Asp Thr	Val Thr Ser Lys Glu Glu Ala	Val Pro Asp Ser Val
50	55	60
Ser Ile Leu Gly Asp	Gln Val Tyr Asp Ile	Val Asn Thr Ala Pro Glu
65	70	75
Phe Pro Gly Gly Met	Lys Ala Cys Leu Glu	Phe Leu Tyr Lys Asn Ile
85	90	95
Thr Tyr Pro Ala Gln	Ala Ile Glu Ser Lys Gln	Glu Gly Gln Val Val
100	105	110
Ile Gln Phe Val Val	Thr Lys Asn Gly Lys Ile	Ile Asp Pro Lys Val
115	120	125
Val Lys Ser Val Ser	Pro Ser Leu Asp Ala Glu	Ala Ile Arg Ile Ile
130	135	140
Asn Leu Met Pro Asp	Trp Thr Pro Gly Lys Gln	Lys Asn Gly Gln Glu
145	150	155
Val Asn Ser Arg Phe	Thr Leu Pro Val Arg	Phe Thr Leu Lys
165	170	

<210> 5659

<211> 145

<212> PRT

<213> B.fragilis

<400> 5659

Thr Met Tyr Asp	Ile Val Ala Gln Arg	Leu Arg Leu Phe	Leu Ala Lys
1	5	10	15
Lys Asp Ile Thr	Cys Lys Lys Leu Ser	Ala Met Ile Phe	Met Ser Glu
20	25	30	
Ala Thr Leu Lys	Gly Lys Leu Asn Gly	Thr Arg Thr Leu	Asp Leu Asn
35	40	45	
Thr Ile Ile Ser	Ile Ala Ile Arg	Leu Glu Asp Leu	Ser Val Glu Trp
50	55	60	
Leu Leu Arg Gly	Glu Gly Asp Met Phe	Lys Ser Ser Ser	Gly Val Ser
65	70	75	80
Ile Leu Ser Ser	Ser Val Pro Ile Phe	Thr Gly Glu Thr	Ser Phe Ile
85	90	95	
Tyr Ser Met Tyr	Lys Glu Glu Arg Glu	Val Lys Thr Leu	Leu Lys
100	105	110	
Gln Asn Gly Ile	Leu Glu Glu Arg	Ile Arg Gln Leu	Glu Asp Asp Asn
115	120	125	
Arg Leu Leu Arg	Asp Gln Val Val	Thr Glu Leu Asn	Leu Asn Thr Lys
130	135	140	
Leu			
145			

<210> 5660

<211> 122

<212> PRT

<213> B.fragilis

<400> 5660

Lys Met His Asp	Ile Val Thr Gln Arg	Leu Asn Gln Phe	Leu Val Glu
1	5	10	15
Lys Asn Ile Thr	Tyr Lys Glu Leu Ser	Gly Met Ile Leu	Met Ser Glu
20	25	30	
Thr Ser Leu Cys	Arg Lys Leu Thr	Gly Ser Arg Ser	Leu Asp Leu His
35	40	45	
Thr Leu Ile Ser	Ile Val Ala Cys	Leu Pro Asp Val	Ser Ser Glu Trp
50	55	60	

Leu Leu Arg Gly Lys Gly Arg Val Cys Asn Ser Ser Ser Ser Ile Ser
 65 70 75 80
 Ser Asp Val Leu Val Glu Glu Leu Lys Met Glu Asn Asn Leu Leu Lys
 85 90 95
 Arg Lys Ile Gln Val Leu Gln Glu Leu Leu Glu Phe Lys Met Glu Lys
 100 105 110
 Ile Arg Ala Glu Asn Gly Asn Ile Lys Lys
 115 120

<210> 5661

<211> 303

<212> PRT

<213> B.fragilis

<400> 5661

Gln Lys Ser Asp His Tyr Val Ser Ser Leu Leu Tyr Ser Val Phe Ile
 1 5 10 15
 Tyr His Met Val Arg Lys Ser Ser Ile Asn Lys Tyr Glu Leu Asp Val
 20 25 30
 Arg Lys Gly Leu Gln Glu Leu Phe Asp Lys Cys Arg His Asn Met Lys
 35 40 45
 His Ser Gly Asp Leu Leu Leu Cys Gln Gln Asn Gly Phe Ile Asp Tyr
 50 55 60
 Lys Gly Arg Pro Cys Val Gly Leu Gly Asp Glu Gly Leu Asn Cys Met
 65 70 75 80
 Gln Gln Val Asn Phe Ile Ser Phe Asn Gly Ile Gly Asn Ile Thr Asp
 85 90 95
 Asp Asn Asp Tyr Tyr Lys Lys Glu Gly Asn Asn Phe Phe Tyr Gly Asn
 100 105 110
 Ser Glu Phe Glu Ala Asp Ile Met Arg Gln His Ile Thr Tyr Met Asn
 115 120 125
 Ile Trp Glu Asn Ser Tyr Phe Leu Arg Val Phe Thr Gln Val Val Asn
 130 135 140
 Val Leu Asn Gly Leu Asn Tyr Asn Trp Asn Leu Thr Phe Lys Asn Leu
 145 150 155 160
 Lys Pro Asn Gln Lys Ser Glu Gln Ile Arg Glu Gly Ile Ile Lys Leu
 165 170 175
 Leu Asp Leu Ser Pro Asn Phe Gln Arg Ile Leu Lys Asp Ala Tyr Val
 180 185 190
 Gly Gln Ile Arg Asn Ala Val Ala His Thr Gln Tyr His Cys Ile Gln
 195 200 205
 Gly Gly Ile Leu Tyr Asp Asn Tyr Ser Pro Ser Ser Lys Tyr Ser Ile
 210 215 220
 Leu Gln Gly Leu Ser Tyr Glu Glu Trp Glu Lys Lys Tyr Val Tyr Ser
 225 230 235 240
 Phe Phe Ile Phe Ile Gly Ile Phe Gln Met Leu Lys Gln Ile Thr Asn
 245 250 255
 Glu Phe Tyr Leu Pro Cys Ser Gln Leu Thr Phe Ala Lys Gly Val Pro
 260 265 270
 Ile Gln Ile Pro Leu Ser Asp Asn Lys Gly Tyr Ala Glu Thr Tyr Leu
 275 280 285
 Tyr Pro Asn Gln Lys Gly Asp Ile Trp Arg Phe Thr Arg Ile Ile
 290 295 300

<210> 5662

<211> 70

<212> PRT

<213> B.fragilis

<400> 5662

Ala	Tyr	Arg	Leu	Asn	Glu	Lys	Gln	Leu	Ser	Met	Tyr	Ile	His	His	Leu
1				5					10					15	
Met	Val	Lys	Asp	His	Lys	Arg	Lys	Tyr	Tyr	Leu	Ser	Tyr	Glu	Lys	
		20						25				30			
Arg	Phe	Ile	Phe	Ile	Ile	Asn	Leu	Val	Ser	Ala	Lys	Leu	Gln	Asn	Ser
		35					40					45			
Asn	Gly	Leu	Lys	Lys	Lys	Lys	Gln	Ser	Asn	Ser	Ser	Ala	Leu	Ile	Cys
	50					55					60				
Phe	Tyr	Arg	Asn	Met	Ala										
65					70										

<210> 5663

<211> 81

<212> PRT

<213> B.fragilis

<400> 5663

Arg	Trp	Arg	Glu	Thr	Ser	Val	Asn	Asn	Phe	Ser	Ser	Leu	Gln	Ser	Cys
1				5					10					15	
Phe	Ile	Asn	Val	Asn	Glu	Ile	Lys	Val	Arg	Phe	Gly	Gly	Ala	Pro	Gly
		20						25					30		
Leu	Val	Met	Thr	Lys	Ser	Trp	Arg	Asp	Gly	Tyr	Arg	Pro	Cys	Glu	Asp
		35					40					45			
Ala	Met	Ser	Leu	Lys	Glu	Ser	Leu	Ala	Ser	Ile	Gly	Met	Thr	Thr	Val
	50					55					60				
Lys	Val	Pro	Phe	Gly	Glu	Ser	Lys	Phe	Asp	Thr	Pro	Phe	Ser	Asn	Ser
65					70				75						80
Ser															

<210> 5664

<211> 69

<212> PRT

<213> B.fragilis

<400> 5664

Ser	Lys	Leu	Phe	Ala	Arg	Leu	Leu	Thr	Leu	Ile	His	Leu	Lys	Val	Gly
1				5					10					15	
Ser	Ser	Thr	Pro	Phe	Ser	Leu	Leu	Leu	Lys	Gly	Val	Lys	Leu	Pro	Thr
		20						25					30		
Met	Val	Cys	Tyr	Ala	Ser	Gly	Leu	Pro	Asp	Ser	Gln	Glu	Val	His	Val
		35					40					45			
Ser	Gln	Lys	Asp	Val	Tyr	Ala	Ala	Phe	Gly	Arg	Tyr	Leu	Leu	Arg	Phe
	50					55					60				
Ala	Phe	Asn	Val	Glu											
65															

<210> 5665

<211> 71

<212> PRT

<213> B.fragilis

<400> 5665

Tyr	Lys	Met	Glu	Leu	Glu	Thr	Ile	Gly	Glu	Asn	Ala	Gly	Lys	Val	Trp
1				5					10					15	
Arg	Thr	Leu	Asn	Glu	Met	Arg	Gly	Glu	Ile	Ser	Ile	Gln	Glu	Leu	Ser
		20						25					30		
Arg	Lys	Ile	Asn	Leu	Ser	Ala	Glu	Asp	Val	Ala	Leu	Ala	Val	Gly	Trp

35 40 45
 Leu Ala Arg Glu Asn Asn Ile Phe Ile Gln Arg His Asn Tyr Leu Leu
 50 55 60
 Tyr Val Ser His Asp Ala Phe
 65 70

<210> 5666
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 5666
 Met Lys Met Glu Asn Ser Val Leu Thr Gly Lys Pro Tyr Asn Ile Gly
 1 5 10 15
 Tyr Ala Leu Ser Gly Gly Phe Ile Lys Gly Phe Ala His Leu Gly Val
 20 25 30
 Ile Gln Ala Leu Leu Glu His Asp Ile Lys Pro Asp Ile Ile Ser Gly
 35 40 45
 Val Ser Ala Gly Ala Leu Ala Gly Val Phe Tyr Ala Asp Gly Asn Glu
 50 55 60
 Pro Tyr Arg Val Leu Asp Tyr Phe Ser Gly His Lys Phe Gln Asp Leu
 65 70 75 80
 Thr Lys Leu Val Ile Pro Lys Val Gly Leu Phe Ala Leu Gly Glu Phe
 85 90 95
 Ile Asp Phe Leu Lys Ser Asn Leu Lys Ala Gln Lys Leu Glu Asp Leu
 100 105 110
 Lys Leu Pro Leu Ile Ile Thr Ala Thr Asp Leu Asp His Gly Arg Ser
 115 120 125
 Met His Phe His Lys Gly Asn Ile Ala Glu Arg Val Ala Ala Ser Cys
 130 135 140
 Cys Met Pro Val Leu Phe Thr Pro Val Lys Ile Gly Asn Thr His Tyr
 145 150 155 160
 Val Asp Gly Gly Leu Leu Met Asn Leu Pro Val Ser Thr Ile Arg Asn
 165 170 175
 Glu Cys Glu Lys Val Val Ala Val Asn Val Ser Pro Leu Met Ala Glu
 180 185 190
 Lys Tyr Lys Met Asn Ile Val Ser Ile Ala Met Arg Ser Tyr His Phe
 195 200 205
 Met Phe Arg Ala Asn Thr Phe Pro Glu Arg Asp Asn Cys Asp Leu Leu
 210 215 220
 Ile Glu Pro Tyr Asn Leu Glu Gly Tyr Ser Asn Thr Glu Leu Glu Lys
 225 230 235 240
 Ala Glu Glu Ile Phe Glu Gln Gly Tyr Asn Thr Ala Ser Glu Val Leu
 245 250 255
 Asp Gln Leu Ile Glu Glu Lys Gly Lys Ile Trp Lys
 260 265

<210> 5667
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 5667
 Arg Asp Ala Asp Ser Leu Gln Leu Phe Cys Gln His Phe Cys Tyr Asn
 1 5 10 15
 Trp Ile Ile Asn Leu Phe Tyr Pro Met Lys Val His Glu Tyr Gln Ala
 20 25 30
 Lys Glu Ile Phe Ser Thr Tyr Gly Ile Pro Val Glu Arg His Ala Leu
 35 40 45

Cys His Thr Ala Asp Gly Ala Val Ala Ala Tyr His Arg Met Gly Val
 50 55 60
 Asn Arg Val Ala Ile Lys Ala Gln Val Leu Thr Gly Gly Arg Gly Lys
 65 70 75 80
 Ala Gly Gly Val Lys Leu Ala Asn Asn Asp Arg Asp Val Tyr Gln Tyr
 85 90 95
 Ala Gln Thr Ile Leu Glu Met Thr Ile Lys Gly Tyr Pro Val Thr Lys
 100 105 110
 Ile Leu Leu Ser Glu Ala Val Asn Ile Ala Ala Glu Tyr Tyr Ile Ser
 115 120 125
 Phe Thr Ile Asp Arg Asn Thr Arg Ser Val Thr Leu Ile Met Ser Ala
 130 135 140
 Ala Gly Gly Met Asp Ile Glu Glu Val Ala Arg Gln Ser Pro Glu Lys
 145 150 155 160
 Ile Ile Arg Cys Ser Ile Asp Pro Leu Ile Gly Val Pro Asp Tyr Leu
 165 170 175
 Ala His Lys Phe Ala Phe Ser Leu Phe Glu Gln Ala Glu Gln Ala Asn
 180 185 190
 Arg Met Ala Thr Ile Ile Gln Asp Leu Tyr Lys Ala Phe Ile Glu Lys
 195 200 205
 Asp Ala Ser Leu Ala Glu Ile Asn Pro Leu Val Leu Thr Pro Val Gly
 210 215 220
 Thr Leu Leu Ala Ile Asp Ala Lys Met Val Phe Asp Asp Asn Ala Leu
 225 230 235 240
 Tyr Arg His Pro Asp Leu Gln Lys Leu Ser Glu Pro Thr Glu Asp Glu
 245 250 255
 Lys Leu Glu Ala Ile Ala Lys Glu Arg Gly Phe Ser Tyr Val Arg Met
 260 265 270
 Asp Gly Glu Ile Gly Cys Met Val Asn Gly Ala Gly Leu Ala Met Thr
 275 280 285
 Thr Met Asp Met Ile Lys Leu Tyr Gly Gly Asn Pro Ala Asn Phe Leu
 290 295 300
 Asp Ile Gly Gly Ser Ser Asn Pro Val Lys Val Ile Glu Ala Met Arg
 305 310 315 320
 Leu Leu Leu Asp Asp Lys Lys Val Lys Val Val Phe Ile Asn Ile Phe
 325 330 335
 Gly Gly Ile Thr Arg Cys Asp Asp Val Ala Ile Gly Leu Leu Gln Ala
 340 345 350
 Phe Glu Gln Ile Gln Thr Asp Ile Pro Ile Ile Val Arg Leu Thr Gly
 355 360 365
 Thr Asn Gly Asn Met Gly Arg Glu Leu Leu Arg Lys Asn Asn Arg Phe
 370 375 380
 Gln Val Ala Gln Thr Met Glu Glu Ala Thr Lys Met Ala Ile Glu Ser
 385 390 395 400
 Leu Lys Lys Glu Ser Ile
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<210> 5668
 <211> 480
 <212> PRT
 <213> B.fragilis

<400> 5668
 His Gln Ser Leu Phe Leu Met Lys Lys Lys Gln Pro Glu Pro Gln Leu
 1 5 10 15
 Phe Gln Lys Gly Tyr Glu Thr Tyr Ala Val Thr Lys Gly Gly Lys Gly
 20 25 30
 Ile Ile Lys Phe Ser Asp Asn Ser Asp Ile Thr Thr Asp Arg Glu Thr
 35 40 45

Ser Thr Val Glu Val Val Pro Lys Gly Lys Glu Ala Pro Ile Lys Phe
 50 55 60
 Val Pro Arg Gly Arg Asn Asn Met Met Tyr Asp Ile Met Lys Lys
 65 70 75 80
 Ile Gly Ala Asn Val Thr Val Gly Ser Asn Val Glu Phe Lys Asn Lys
 85 90 95
 Val Val Tyr Gly Asp Ser Val Leu Val Tyr Arg Lys Tyr Arg Asp Lys
 100 105 110
 Glu Thr Arg Lys Ile Ile Lys Glu Glu Val Leu Pro Glu Glu Tyr Pro
 115 120 125
 Asp Ile Phe Asp Phe Ile Glu Asn Asn Asp Ile Pro Phe Ile Arg Met
 130 135 140
 Glu Ile Ala Asn Asp Leu Val Ile Phe Tyr Asp Ala Tyr Val Glu Tyr
 145 150 155 160
 Ile Phe Asn Gln Asp Thr Gln Pro Arg Leu Val Gln Val Lys Ala Lys
 165 170 175
 Glu Ala Thr Cys Ser Arg Ile Ser Val Ile Asp Glu Arg Thr Gly Lys
 180 185 190
 Ser Glu Tyr His Gly Tyr Ser Ala Lys Trp His Glu Gly Met Pro Asp
 195 200 205
 Asp Val Ile Ala Thr Pro Leu Asp Arg Gln Ala Pro Leu Arg Asp
 210 215 220
 Leu Lys Thr Arg Met Gly Leu Phe Pro Asn Glu Lys Gly Ile Lys Glu
 225 230 235 240
 Ile Val Lys Asp Arg Arg Phe Ile His Asn Ile Arg Ile Ala Thr Pro
 245 250 255
 Gly Arg Phe Tyr Tyr Ser Lys Pro Tyr Trp Trp Ser Val Phe Val Ser
 260 265 270
 Gly Trp Tyr Asp Phe Gly Asn Ala Ile Pro Ile Phe Lys Lys Ala Leu
 275 280 285
 Ile Lys Asn Gln Met Ala Leu Arg Tyr Ile Val Tyr Ile Lys Glu Asp
 290 295 300
 Phe Trp Gly Lys Leu Tyr Ala Asp Glu Lys Ile Thr Asn Glu Ala Asp
 305 310 315 320
 Gln Ala Val Arg Arg Glu Thr Phe Leu Gln Asp Met Asn Asp Phe Leu
 325 330 335
 Ala Gly Glu Glu Asn Ala Gly Lys Gly Phe Val Ser His Phe Arg Tyr
 340 345 350
 Asp Arg Val Lys Gly Phe Glu Asp Lys Asp Ile Ile Ile Asn Thr Leu
 355 360 365
 Asp Ser Phe Phe Lys Gly Gly Glu Tyr Ile Glu Asp Ser Glu Glu Val
 370 375 380
 Ser Asn Thr Ile Cys Tyr Gly Met Asn Val His Pro Ser Ile Ile Gly
 385 390 395 400
 Ala Ala Pro Gly Lys Gly Lys Ser Ile Asn Gly Thr Glu Ala Arg Glu
 405 410 415
 Leu Phe Ile Ile Glu Gln Ala Leu Met Lys Met Phe Gln Glu Ala Thr
 420 425 430
 Leu Thr Pro Leu Tyr Phe Ala Lys Ala Val Asn Gly Trp Pro Lys Asp
 435 440 445
 Ile Tyr Phe Ser Val Thr Asn Cys Gln Leu Thr Thr Leu Asp Lys Gly
 450 455 460
 Thr Gly Ala Thr Lys Asn Thr Gly Leu Thr Ser Glu Thr Glu Glu Lys
 465 470 475 480

<210> 5669

<211> 214

<212> PRT

<213> B.fragilis

<400> 5669

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Ser Asn Ile Leu Gly Gly Leu Thr Met Gly Tyr Tyr Lys Arg Leu Ser
1           5           10           15
Thr Tyr Arg Ala Glu Val Lys Arg Tyr Asn Ala Ser Arg Arg Lys Ala
20           25           30
Thr Gln Leu Thr Asn Ala Pro Ala Ser Gly Leu Ile Arg Leu Glu Thr
35           40           45
Val Ser Glu Thr Glu Arg Phe Ser Met Ala Gln Asp Ala Asp Arg Leu
50           55           60
Thr Ala Tyr Asn Lys Ala Val Glu Lys Trp Gln Asp Ser Val Ala Arg
65           70           75           80
Gln Leu Arg Ala Gly Ile Ala Gly Arg Ser Met Arg Ile Ala Arg Glu
85           90           95
Leu Glu Pro Arg Ala Tyr Thr Asp Lys Tyr Gly Ile Ile Asn Arg Leu
100          105          110
Gly Phe Ser Phe Pro Arg His Gly Ile Tyr Ile His Lys Gly Ala Gly
115          120          125
Glu Gly Gln Gly Gly Phe Ile Gly Ser Lys Trp Asn Tyr Leu Lys Lys
130          135          140
Ile Asn Gly Val Glu Ile Asp Thr Gly Ile Val Arg His Thr Asn Leu
145          150          155          160
Lys Ser Leu Gly Arg Gln Asn Glu Gly Asn Arg Arg Ala Tyr Glu Trp
165          170          175
Phe Asp Pro Val Ile Arg Asn Arg Ile Asn Glu Leu Ala Asp Ile Val
180          185          190
Thr Asp Tyr Phe Asp Thr Met Leu Ile Asp Ala Thr Arg Ile Tyr Ile
195          200          205
Asp Lys Arg Asn Ser Leu
210

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<210> 5670

<211> 733

<212> PRT

<213> B.fragilis

<400> 5670

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His Met Ser Leu Lys Ile Lys Asn Gln Leu Gly Ile Phe Asp Leu Gln
1           5           10           15
Asn Asp Phe Ser Ile Glu Ile Glu Asp Thr Ser Pro Ile Tyr Asn Glu
20           25           30
Arg Gly Ser Gln Ser Val Pro Ala Thr Leu Pro Ala Ser Arg Asn Asn
35           40           45
Leu Ser Leu Ile Thr His Val His Arg Pro Asp Ser Thr Tyr Ser Pro
50           55           60
Ala Pro Asp Ala Arg Val Thr Val Ser Asp Gly Val Tyr Asn Arg Ile
65           70           75           80
Gly Lys Met Asn Ile Thr Gln Ala Ser Lys Ser Gly Gly Ile Val Ser
85           90           95
Asn Ile Gly Phe Asp Glu Ser Glu Leu Tyr Ser Glu Trp Asn Ala Val
100          105          110
Ser Leu Arg Ser Leu Ser Ala Pro Val Ile Arg Pro Glu Gly Gly Thr
115          120          125
Thr Gly Val Ile Ser Leu Leu Asn Ser Ile Met Asn Glu Thr Ile Val
130          135          140
Asp Asp Ala Leu Ser Ile Phe Pro Ile Cys Val Ser Ile Pro Ser His
145          150          155          160
Ala Thr Thr Val Asp Asp Thr Glu Thr Thr Thr Tyr Tyr Pro Glu Tyr
165          170          175

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Ile	Asn	Lys	Ile	Thr	Lys	Leu	Glu	Asn	Gly	Thr	Tyr	Ser	Leu	Gln	Gly		
			180					185					190				
Ala	Ala	Arg	Gln	Glu	Thr	Phe	Leu	Ile	Asn	Asn	Glu	Pro	Val	Leu	Thr		
		195					200					205					
Ser	Val	Pro	Glu	Gly	Tyr	Ala	Ile	Ser	Pro	Phe	Leu	Lys	Val	Ser	Trp		
	210					215					220						
Ile	Leu	Asn	Phe	Ile	Phe	Val	Arg	Tyr	Gly	Tyr	Thr	Val	Leu	Glu	Asn		
225				230						235					240		
Pro	Phe	Ser	Thr	His	Arg	Gln	Leu	Ser	Arg	Leu	Val	Val	Leu	Asn	Asn		
			245						250					255			
Met	Ala	Asp	Ser	Ile	Val	Lys	Gly	Phe	Ile	Asp	Tyr	Ser	Asp	Leu	Leu		
		260						265					270				
Pro	Asp	Cys	Thr	Ile	Asn	Glu	Phe	Leu	Gln	Ala	Leu	Tyr	Cys	Arg	Phe		
		275					280					285					
Gly	Met	Val	Tyr	Phe	Val	Asp	Gly	Lys	Asn	Lys	Thr	Val	Asn	Leu	Lys		
	290					295					300						
Phe	Ile	Lys	Asp	Ile	Ile	Ser	Thr	Pro	Ala	Ser	Leu	Asn	Trp	Ser	Leu		
305				310					315						320		
Leu	Lys	Ser	Ala	Arg	Pro	Ala	Ile	Asn	Tyr	Ala	Ala	Ala	Gln	Gln	Leu		
			325						330					335			
Lys	Leu	Ser	Ala	Ser	Thr	Asn	Ile	Ser	Gly	Pro	Tyr	Thr	Asn	Leu	Val		
		340						345					350				
Ala	Thr	Pro	Thr	Ala	Asp	Ser	Leu	Asp	Lys	Phe	Leu	Lys	Thr	Phe	Gly		
		355					360					365					
His	Val	Leu	Ser	Ser	Asn	Thr	Ala	Lys	Gly	Tyr	Leu	Thr	Tyr	Ser	Leu		
	370					375						380					
Trp	Asp	Gly	Phe	Tyr	Tyr	Val	Arg	Asn	Asn	Leu	Thr	Gly	Val	Arg	Glu		
385				390						395					400		
Ala	Arg	Ser	Ser	Asp	Phe	Phe	Pro	Trp	Asp	Lys	Gly	Ala	Asn	Ile	Ser		
			405					410					415				
Tyr	Met	Glu	Ile	Ser	Ser	Ile	Asp	Glu	Cys	Leu	Pro	Met	Lys	Gly	Ser		
		420					425					430					
Tyr	Pro	Asp	Asp	Gln	Pro	Val	Cys	Pro	Ala	Tyr	Leu	Leu	Gly	Lys	Val		
	435						440					445					
His	Lys	Tyr	Thr	Asn	Ile	Ser	Ser	Ala	Ser	Val	Glu	Leu	Ser	Glu	Glu		
	450					455					460						
Gln	Asn	Thr	Gln	Thr	Pro	Leu	Cys	Phe	Cys	Phe	Ser	Met	Pro	Arg	Ala		
465				470						475					480		
Ser	Thr	Pro	Tyr	Pro	Tyr	Gly	Ser	Pro	Arg	Cys	Tyr	Thr	Pro	Gly	Gly		
			485					490					495				
Glu	Ala	Ile	Ala	Ile	Asn	Gly	His	Thr	Phe	Asp	Ile	Ser	Met	Thr	Phe		
		500					505					510					
Thr	Gly	Asp	Asn	Gly	Leu	Phe	Ser	Arg	Phe	Trp	Lys	Gly	Phe	Asp	Ala		
	515					520					525						
Ile	Leu	Arg	His	Ser	Asn	His	Thr	Val	Glu	Val	Pro	Val	His	Leu	Asn		
	530					535					540						
Pro	Ile	Gln	Leu	Leu	Asn	Ile	Asp	Phe	Ser	Gln	Thr	Ile	Asn	Ile	Asp		
545					550					555					560		
Gly	Gln	Arg	Leu	Leu	Leu	Asp	Thr	Val	Arg	Tyr	Thr	Leu	Pro	Lys	Leu		
			565					570						575			
Leu	Ser	Arg	Pro	Ala	Thr	Ile	Arg	Leu	Arg	Thr	Leu	Arg	Leu	Leu	Ile		
		580						585				590					
Pro	Val	Gly	Glu	Thr	Asp	Leu	Asp	Leu	Asp	Ala	Glu	Gln	Gly	Ile	Gln		
	595					600					605						
Thr	Ile	Glu	Gln	Leu	Tyr	Lys	Trp	Ala	Phe	His	Asn	Asn	Arg	Glu	Asn		
	610					615					620						
Ile	Val	Glu	Leu	Lys	Ile	Arg	Ala	Gln	Val	Glu	Glu	Trp	Lys	Lys	Ala		
625				630						635					640		
Ile	Thr	Pro	Pro	Ala	Gln	Trp	Leu	Gly	Val	Leu	Arg	Lys	Asn	Glu	Val		

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<210> 5671
<211> 73
<212> PRT
<213> B.fragilis
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<210> 5672
<211> 149
<212> PRT
<213> B.fragilis
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<210> 5673
<211> 79
<212> PRT
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<213> B.fragilis

<400> 5673

Phe	Glu	Ile	Cys	Met	Thr	Tyr	Asn	Thr	Gly	Ile	Tyr	Leu	Asn	Ser	Ile
1				5					10					15	
Asn	Phe	Phe	Glu	Val	Ile	Pro	Phe	Gly	Thr	Asp	Glu	Ala	Thr	Leu	Thr
			20					25					30		
Phe	Ala	Gly	Ala	Leu	Val	Asp	Val	Asp	Ser	Met	Ser	Arg	Glu	Gly	Glu
		35					40					45			
Thr	Lys	Thr	Val	Asp	Asn	Thr	Val	Phe	Val	Gly	Val	Gly	Pro	Trp	Leu
	50				55						60				
Lys	Phe	Thr	Gly	Tyr	Ser	His	Thr	Ala	Ala	Gly	Tyr	Ser	Gly	Ser	
65					70					75					

<210> 5674

<211> 221

<212> PRT

<213> B.fragilis

<400> 5674

Leu	Val	Thr	Cys	Ile	Thr	Asp	Ser	Leu	Thr	Lys	Met	Lys	Lys	Leu	Leu
1				5					10					15	
Thr	Lys	Gly	Gln	Ile	Ala	Ile	Leu	Val	Ile	Phe	Ser	Val	Leu	Ile	Ile
			20					25					30		
Asp	Gln	Val	Ile	Lys	Ile	Trp	Ile	Lys	Thr	His	Met	Tyr	Trp	His	Glu
		35					40					45			
Ser	Ile	Arg	Ile	Thr	Asp	Trp	Phe	Tyr	Ile	Tyr	Phe	Thr	Glu	Asn	Asn
	50				55					60					
Gly	Met	Ala	Phe	Gly	Met	Glu	Leu	Phe	Gly	Lys	Leu	Phe	Leu	Thr	Thr
65					70				75					80	
Phe	Arg	Ile	Val	Ala	Val	Gly	Leu	Ile	Gly	Trp	Tyr	Leu	Tyr	Lys	Ile
				85					90					95	
Val	Lys	Arg	Gly	Leu	Lys	Thr	Gly	Tyr	Ile	Ile	Cys	Val	Ser	Leu	Ile
			100					105					110		
Leu	Thr	Gly	Ala	Leu	Gly	Asn	Ile	Ile	Asp	Ser	Val	Phe	Tyr	Gly	Val
		115				120						125			
Ile	Phe	Asn	Glu	Ser	Thr	His	Ser	Gln	Ile	Ala	Ser	Phe	Met	Pro	Asp
	130				135						140				
Gly	Gly	Gly	Tyr	Ser	Thr	Trp	Phe	Tyr	Gly	Lys	Val	Val	Asp	Met	Phe
145					150				155						160
Tyr	Phe	Pro	Ile	Ile	Asp	Thr	Asn	Trp	Pro	Thr	Trp	Met	Pro	Phe	Val
				165				170						175	
Gly	Gly	Glu	His	Phe	Ile	Phe	Phe	Ser	Pro	Ile	Phe	Asn	Phe	Ala	Asp
			180				185					190			
Ala	Ala	Ile	Ser	Cys	Gly	Ile	Ile	Ala	Leu	Leu	Leu	Phe	Tyr	Ser	Lys
		195					200					205			
Tyr	Leu	Asn	Asp	Ser	Tyr	His	His	Ser	Val	Thr	Lys	Lys			
	210					215					220				

<210> 5675

<211> 334

<212> PRT

<213> B.fragilis

<400> 5675

Pro	Tyr	His	Cys	Asn	Lys	Ile	Ser	Ala	Met	Ser	Gln	Lys	Arg	Ile	Ile
1				5					10					15	
Leu	Ser	Asp	Ser	Ser	Leu	Asn	Arg	Tyr	Gly	Tyr	Arg	Val	Leu	Thr	Ala
		20						25					30		

Gly Leu Leu Leu Glu Ala Phe Ile Asp Asn Pro Val Met Leu Tyr Gly
 35 40 45
 His Phe Arg Asp Glu Gly Ser Pro Leu Trp Cys Asp Tyr Lys Ala Ile
 50 55 60
 Gly Tyr Trp Asp Asp Ile Lys Ile Glu Asp Asp Val Leu Ser Ala Ile
 65 70 75 80
 Pro Val Phe Asp Lys Val Asp Asp Leu Ser Lys Thr Ile Ala Ala Lys
 85 90 95
 Tyr Glu Ala Gly Thr Leu Arg Ala Ala Ser Ile Gly Ile Arg Ile Leu
 100 105 110
 Ala Thr Ser Ser Glu Lys Glu Tyr Leu Leu Pro Gly Gln Thr Arg Glu
 115 120 125
 Thr Val Thr Lys Ala Glu Val Met Glu Ala Ser Ile Val Asp Ile Pro
 130 135 140
 Ala Asn Ser His Ala Val Arg Leu Tyr Asp Arg Ser Ser Ser Val Leu
 145 150 155 160
 Leu Ala Ala Gly Met Asp Thr Asn Ile Val Pro Ala Leu Thr Ile Pro
 165 170 175
 Lys Glu Lys Ala Met Asn Tyr Lys Pro Ser Trp Thr Gly Phe Leu Ser
 180 185 190
 Phe Leu Gly Ile Ser Lys Asp Lys Ala Glu Thr Thr Glu Leu Ser Ala
 195 200 205
 Glu Asn Leu Asp Ser Ile His Ala Glu Met Glu Arg Leu Lys Thr Glu
 210 215 220
 Asn Ala Thr Leu Val Gln Ala Lys Thr Asp Ile Glu Glu Lys Leu Asn
 225 230 235 240
 Ser Ala Asn Ala Lys Ile Thr Glu Leu Asn Gly Ser Thr Ser Gly Lys
 245 250 255
 Asp Asn Glu Ile Ser Thr Leu Lys Asn Ser Ile Thr Glu Lys Asp Ser
 260 265 270
 Lys Ile Thr Gln Leu Glu Glu Gln Val Lys Asn Leu Lys Asn Gly Pro
 275 280 285
 Thr Pro Gly His Ala Gly Leu Thr Pro Glu Gln Glu Pro Glu Gly Ser
 290 295 300
 Gly Thr Gln Glu Glu Leu Ser Ala Phe Cys Asp Gln Asn Ala Gly Asn
 305 310 315 320
 Tyr Gln Ala Ile Thr Glu Lys Leu Lys Ala Glu Gly Leu Tyr
 325 330

<210> 5676
 <211> 468
 <212> PRT
 <213> B.fragilis

<400> 5676
 Leu Lys Glu Cys Thr Met Lys Lys Ser Thr Lys Phe Ile Ile Ala Leu
 1 5 10 15
 Leu Val Thr Val Gly Ala Leu Ala Ile Thr Tyr Arg Val Val Asn Gln
 20 25 30
 Ala Pro Ser Lys Asp Leu Ala Ala Asp Ala Gln Met Gln Glu Ile Ile
 35 40 45
 Thr Ser Gly Gly Cys Leu Gln Cys His Ser Gly Ser Pro Asp Leu Pro
 50 55 60
 Phe Tyr Ala Asn Trp Pro Val Ala Ser Gly Met Val Gln Lys Asp Val
 65 70 75 80
 Thr Gln Gly Tyr Arg Ala Phe Asp Met Thr Glu Met Ala Glu Ala Leu
 85 90 95
 Lys Ala Gly Lys Pro Val Gly Lys Val Ala Leu Ala Lys Val Glu Lys
 100 105 110

Val Ile Met Asp Gly Thr Met Pro Lys His Ala Tyr Tyr Met Val His
 115 120 125
 Trp Gly Ser Ser Val Thr Asp Ala Lys Lys Glu Met Ala Met Ala Trp
 130 135 140
 Val Lys Gln His Arg Leu Ala His Tyr Ala Asn Gly Leu Ala Ala Ala
 145 150 155 160
 Glu Phe Ala Asn Glu Pro Ile Arg Pro Ile Ala Asp Ser Ile Pro Val
 165 170 175
 Asp Met Arg Lys Val Ile Leu Gly Asp Met Leu Tyr His Asp Thr Arg
 180 185 190
 Leu Ser Ala Asp Asn Thr Val Ser Cys Ala Ser Cys His Gly Leu Asn
 195 200 205
 Thr Gly Gly Val Asp Asn Lys Gln Tyr Ser Glu Gly Val Gly Gly Gln
 210 215 220
 Phe Gly Gly Val Asn Ala Pro Thr Val Tyr Asn Ala Ala Tyr Asn Phe
 225 230 235 240
 Val Gln Phe Trp Asp Gly Arg Ala Gly Thr Leu Ala Glu Gln Ala Ala
 245 250 255
 Gly Pro Pro Leu Asn Pro Val Glu Met Ala Cys Gln Ser Phe Asp Glu
 260 265 270
 Ile Ile Ala Lys Leu Glu Gln Asp Ala Asn Phe Thr Lys Ala Phe Leu
 275 280 285
 Ala Val Tyr Pro Asp Gly Tyr Ser Glu Gln Asn Ile Thr Asn Ala Ile
 290 295 300
 Glu Glu Phe Glu Lys Thr Leu Leu Thr Pro Asn Ser Arg Phe Asp Leu
 305 310 315 320
 Tyr Leu Lys Gly Glu Lys Thr Ala Ile Asn Asp Ile Glu Leu Ala Gly
 325 330 335
 Tyr Glu Leu Phe Lys Lys Tyr Asp Cys Ala Thr Cys His Val Gly Glu
 340 345 350
 Thr Leu Gly Gly Gln Ser Tyr Glu Leu Met Gly Val Lys Arg Asp Tyr
 355 360 365
 Phe Ala Asp Arg Gly Ile Glu Leu Thr Glu Glu Asp Asn Gly Arg Phe
 370 375 380
 Lys Gln Thr Arg Asn Glu Arg Asp Lys His Arg Phe Lys Val Pro Gly
 385 390 395 400
 Leu Arg Asn Ile Ala Leu Thr Ala Pro Tyr Phe His Asp Gly Ser Met
 405 410 415
 Lys Thr Met Lys Glu Ala Val Asp Tyr Met Ala Lys Tyr Gln Met Asp
 420 425 430
 Leu Asn Leu Pro Glu Asp Glu Leu Asn Lys Ile Val Ala Phe Leu Glu
 435 440 445
 Thr Leu Thr Gly Glu Tyr Lys Gly Lys Pro Leu Thr Asn Asp Asn Gln
 450 455 460
 Thr Lys Ala Leu
 465

<210> 5677
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5677
 Val Thr Thr Cys Ser Pro Pro Ala Pro Gly Glu Asp Leu Glu Thr Gly
 1 5 10 15
 Val Leu Lys Leu Thr Asp Ser Pro Ala Ile Gln Ser Phe Pro Lys Arg
 20 25 30
 Val Gly Val Val Glu Asp Val Met Leu Cys Ala Phe Ser Ala Thr Val
 35 40 45

Thr Pro Ser Leu Ala Arg Val Ala Thr Thr Phe Thr Asp Phe Lys
 50 55 60

<210> 5678

<211> 262

<212> PRT

<213> B.fragilis

<400> 5678

Ile Ser Ile Arg Phe Val Leu Tyr Ser Gln Ile Cys Arg Tyr Met Lys
 1 5 10 15
 Asn Ser Asp Leu Thr Thr Tyr Gly Glu Tyr Leu Glu Lys Leu Ser Pro
 20 25 30
 Lys His Gly Arg Glu Lys Val Phe Asn Asp Phe Leu Gln Ile Val Val
 35 40 45
 Cys Cys Leu Ser Met Gly Arg Lys Glu Glu Leu Tyr Phe Lys Thr Ile
 50 55 60
 Lys Pro Tyr Asp Lys Thr Glu Leu Asp Leu Phe Ser Gln Ala Phe Ala
 65 70 75 80
 Ala Leu Val Met Gln Met Asp Arg Gln Pro Leu Val Asp Pro Phe Gly
 85 90 95
 Asp Tyr Phe Gln Glu Phe Leu Ser Asn Ala Gln Asn Gly Gln Phe Phe
 100 105 110
 Thr Pro Phe Gly Val Cys Glu Leu Met Asn Gln Leu Ile Thr Ala Pro
 115 120 125
 Lys Val Asn Asp Gln Pro Lys Gln Gly Asp Arg Arg Val Leu Asp Pro
 130 135 140
 Ala Cys Gly Ser Gly Arg Leu Leu Leu Ser Ala Ala Gln Lys Asp Arg
 145 150 155 160
 Ala Leu Thr Phe Val Gly Ile Asp Ile Ser Tyr Thr Cys Cys Leu Met
 165 170 175
 Thr Ile Ile Asn Leu Cys Leu Asn Ser Leu Asn Gly Glu Val Leu His
 180 185 190
 Met Asn Ala Leu Thr Asp Gln Cys Trp His Arg Trp Leu Ile Ile Val
 195 200 205
 Asp Ser Val Thr Lys Ile Pro Thr Val Tyr Glu Val Glu Ala Gly Ile
 210 215 220
 Ile Asn Gln Pro Pro Ala Cys Ala Asp Asp Leu Lys Pro Leu Pro Val
 225 230 235 240
 Thr Gly Ile Ile Gln Pro Val Lys Asn Met Ile Pro Ala Asn Phe Val
 245 250 255
 Arg Tyr Thr Pro Lys Cys
 260

<210> 5679

<211> 121

<212> PRT

<213> B.fragilis

<400> 5679

Arg Asn Leu Arg Pro Ile Arg Val Ser Glu Pro Ile Pro Leu Arg Thr
 1 5 10 15
 Ile Phe Thr Ser Ala Pro Thr Asn Ser His Arg Leu Ala Met Ser Phe
 20 25 30
 Met Lys Leu Ile Arg Val Ala Asn Ile Glu Phe Ala Ala Tyr Leu Val
 35 40 45
 Ile Ser Ala Glu Gly Ile Ser Met Asn Ile Thr Arg Lys Leu Phe Ser
 50 55 60
 Met Asn Gly Leu Tyr Ser Leu Val Ile Asn Phe Ser Ala Arg Ser Asp

65		70		75		80
Ser Thr Pro Ile	Thr Thr Arg Ser Gly	Leu Ile Lys Ser Leu Thr Ala				
	85	90				
Leu Pro Ser Phe	Arg Asn Ser Gly Leu Glu Ala Thr Ser Asn Ser Ile					
	100	105				
Leu Ala Pro Arg	Leu Ser Asn Ser Ser					
	115	120				

<210> 5680

<211> 300

<212> PRT

<213> B.fragilis

<400> 5680

Asn Gly Tyr Arg	Ile Ile Lys Glu Arg	Ile Asp Met Ser	Ile Leu Ile
1	5	10	15
Asp Lys Ser Thr	Arg Leu Leu Val Gln Gly	Ile Thr Gly Arg	Asp Gly
	20	25	30
Leu Phe His Ala	Lys Lys Met Ala Glu Tyr Gly	Thr Asn Val Val Gly	
	35	40	45
Gly Thr Ser Pro	Gly Lys Gly Thr Met Ile Asp	Asp Thr Phe Pro	
	50	55	60
Val Phe Asn Thr	Met His Glu Ala Val Arg Arg	Thr Gln Ala Asn Thr	
65	70	75	80
Ser Val Ile Phe	Val Pro Ala Arg Phe Ala Ala Asp	Ala Ile Met Glu	
	85	90	95
Ala Ala Asp Ala	Gly Ile Arg Leu Ile Ile Cys Ile	Thr Glu Gly Ile	
	100	105	110
Pro Thr Leu Asp	Val Ile Lys Ala Tyr Arg Phe	Val Glu Leu Lys Gly	
	115	120	125
Ala Lys Leu Ile	Gly Pro Asn Cys Pro Gly Leu Ile	Ser Pro Gly Glu	
	130	135	140
Ser Leu Val Gly	Ile Leu Pro Gly Gln Val Phe Thr	Pro Gly Asn Ile	
145	150	155	160
Gly Val Ile Ser	Arg Ser Gly Thr Leu Thr Tyr Glu	Ile Val Ser His	
	165	170	175
Leu Thr Ala Lys	Gly Met Gly Gln Ser Thr Ala Ile	Gly Met Gly Gly	
	180	185	190
Asp Pro Val Val	Gly Leu Tyr Phe Arg Asp Leu Leu	Gly Met Leu Gln	
	195	200	205
Asn Asp Pro Gln	Thr Asp Ala Ile Val Met Ile	Gly Glu Ile Gly Gly	
	210	215	220
Asn Ala Glu Glu	Leu Ala Ala Thr Tyr Ile Arg Glu	His Val Thr Lys	
225	230	235	240
Pro Val Val Ala	Phe Ile Ala Gly Arg Ser Ala Pro	Pro Gly Lys Gln	
	245	250	255
Met Gly His Ala	Gly Ala Ile Ile Ser Gly Ser Ser	Gly Ser Ala Thr	
	260	265	270
Glu Lys Ile Ser	Ala Leu Glu Ala Ala Gly Ile Arg	Val Ala Gly Glu	
	275	280	285
Pro Ser Glu Ile	Pro Asp Leu Leu Lys Gly Ser Phe		
	290	295	300

<210> 5681

<211> 586

<212> PRT

<213> B.fragilis

<400> 5681

465		470		475		480
Ile Ser Asn Gly Val	Phe Phe Asp Leu Met Tyr Ala Asn Glu Asn Gly					
	485		490		495	
Trp Arg Phe Asn Glu His Lys Gln Tyr Thr Phe Met Arg Lys Tyr Lys						
	500		505		510	
Asn Glu Leu Leu Phe Ile Val Val Asn Phe Asp Asn Gln Pro Val Asn						
	515		520		525	
Val Ala Ile Asn Val Pro Ser His Ala Phe Asp Phe Leu Gln Ile Pro						
	530		535		540	
Gln Phe Asp Ser Tyr Lys Ala Val Asp Leu Leu Thr Asp Lys Val Glu						
	545		550		555	
Glu Ile Ser Leu Leu Pro Tyr Lys Ala Thr Glu Ile Ala Leu Gly Ala						
	565		570		575	
Tyr Thr Gly Lys Ile Leu Lys Ile Lys Phe						
	580		585			

<210> 5682
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 5682
Cys Asn Ile Arg Arg Phe His Asp Asp Phe Met Leu Asn Thr Leu Ser
1 5 10 15
Gln Phe Ile Thr Ser Asn Lys Arg Asp Gly Thr Arg Tyr Met Pro Phe
20 25 30
Ala Phe Ile Glu Leu Gly Val Ala Met Leu Ser Ser Ile Leu Asn Ser
35 40 45
Glu Val Val Ile Glu Ile Asn Lys Arg Leu Tyr Arg Arg Ser Val Tyr
50 55 60

<210> 5683
 <211> 258
 <212> PRT
 <213> B.fragilis

<400> 5683
Phe Gln Ser Arg Ser Met Cys Ser Glu Pro Asp Thr Phe Val Gln Thr
1 5 10 15
Leu Lys Asn Ile Lys Met Lys Lys Val Ile Ile Ile Gly Ala Thr Ser
20 25 30
Gly Ile Gly Lys Gly Leu Ala Glu Arg Phe Leu Arg Glu Gly Asn Thr
35 40 45
Val Gly Ile Thr Gly Arg Arg Glu Asp Lys Leu Gln Glu Ile Cys Ser
50 55 60
Gln Asn Lys Asn Cys Phe Tyr Ser Val Ser Asp Val Thr Lys Asp Thr
65 70 75 80
Asp Thr Val Arg Gln Leu Ser Asn Leu Val Asn Arg Val Gly Gly Met
85 90 95
Asp Ile Leu Ile Phe Cys Ser Gly Ile Gly Glu Leu Asn Pro Glu Leu
100 105 110
Asp Tyr Leu Leu Glu Lys Pro Thr Leu Leu Thr Asn Val Ile Gly Phe
115 120 125
Thr Asn Val Val Asp Trp Ala Phe His Phe Phe Gln Lys Gln Glu Trp
130 135 140
Gly His Leu Ile Val Ile Ser Ser Val Gly Gly Met Arg Gly Glu Gly
145 150 155 160
Ile Ala Pro Ala Tyr Asn Ala Ser Lys Ala Tyr Gln Ile Asn Tyr Thr
165 170 175

Glu Gly Leu Arg Lys Lys Thr Ala Lys Leu Pro Tyr Pro Ile Tyr Ile
 180 185 190
 Thr Asp Val Arg Pro Gly Phe Val Asp Thr Ala Met Ala Lys Gly Glu
 195 200 205
 Gly Leu Phe Trp Ile Thr Pro Leu Asp Lys Ala Val Gln Gln Ile Tyr
 210 215 220
 Arg Ala Ile Leu Arg Arg Arg Lys Val Ala Tyr Val Ser Lys Arg Trp
 225 230 235 240
 Lys Tyr Val Ala Leu Leu Leu Arg Met Ile Pro Ala Ser Ile Tyr Cys
 245 250 255
 Lys Met

<210> 5684
 <211> 472
 <212> PRT
 <213> B.fragilis

<400> 5684
 Lys His Lys Arg Met Lys Asn Phe Met Asp Lys Asn Phe Leu Leu Gln
 1 5 10 15
 Thr Glu Thr Ala Gln Glu Leu Tyr His Asn His Ala Ala Lys Met Pro
 20 25 30
 Ile Ile Asp Tyr His Cys His Leu Asn Pro Gln Met Val Ala Asp Asp
 35 40 45
 Tyr Arg Phe Lys Ser Leu Thr Glu Ile Trp Leu Gly Gly Asp His Tyr
 50 55 60
 Lys Trp Arg Ala Met Arg Ser Asn Gly Val Asp Glu Cys Phe Cys Thr
 65 70 75 80
 Gly Lys Glu Thr Ser Asp Trp Glu Lys Phe Glu Lys Trp Ala Glu Thr
 85 90 95
 Val Pro Tyr Thr Phe Arg Asn Pro Leu Tyr His Trp Thr His Leu Glu
 100 105 110
 Leu Lys Thr Ala Phe Gly Ile Asp Lys Val Leu Asn Pro Lys Thr Ala
 115 120 125
 Arg Glu Ile Tyr Asp Glu Cys Asn Glu Lys Leu Ser Ser Gln Glu Tyr
 130 135 140
 Ser Ala Arg Gly Met Met Arg Arg Tyr His Val Glu Thr Val Cys Thr
 145 150 155 160
 Thr Asp Asp Pro Ile Asp Ser Leu Glu Tyr His Ile Arg Thr Arg Glu
 165 170 175
 Ser Gly Phe Glu Ile Lys Met Leu Pro Thr Trp Arg Pro Asp Lys Val
 180 185 190
 Met Ala Val Glu Val Pro Ser Asp Phe Arg Thr Tyr Ile Glu Lys Leu
 195 200 205
 Ser Glu Ile Ser Glu Ile Thr Ile Ser Asp Tyr Asn Asp Met Ile Leu
 210 215 220
 Ala Leu Arg Lys Arg His Asp Tyr Phe Ala Glu Gln Gly Cys Lys Leu
 225 230 235 240
 Ser Asp His Gly Ile Glu Glu Phe Tyr Ala Glu Asp Tyr Thr Glu Gly
 245 250 255
 Glu Ile Lys Thr Ile Phe Asn Lys Ile Tyr Gly Gly Ser Glu Leu Thr
 260 265 270
 Lys Glu Glu Val Leu Lys Phe Lys Ser Ala Met Leu Ile Val Leu Gly
 275 280 285
 Glu Met Asp Trp Glu Lys Gly Trp Thr Gln Gln Phe His Tyr Gly Ala
 290 295 300
 Ile Arg Asn Asn Asn Ser Arg Met Phe Lys Leu Leu Gly Pro Asp Thr
 305 310 315 320

Gly

<210> 5686
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 5686
 Ile Ile Met Ser Leu Asn Asp Arg Leu Arg Ile Val Val Asn Glu Phe
 1 5 10 15
 Phe His Gly Asn Lys Ala Ala Phe Ala Arg Ala Ala Lys Ile Ser Asp
 20 25 30
 Gln Arg Ala Tyr Ser Cys Leu Ser Val Arg Ser Asn Thr Glu Pro Pro
 35 40 45
 Ala Arg Val Leu Glu Asn Leu Ala Lys Tyr Leu Pro Asn Leu Asn Ala
 50 55 60
 Thr Trp Leu Leu Thr Gly Glu Gly Glu Met Ile Gln Asp Lys Ser Thr
 65 70 75 80
 Pro Glu Met Pro Ile Thr Leu Val Ser Val Asn Glu Tyr Lys Ser Arg
 85 90 95
 Leu Gln Gln Met Glu Val Arg Leu Glu Ala Leu Arg Ala Gln Val Val
 100 105 110
 Leu Lys Asp Lys Leu Leu Ala Gly Leu Leu Arg Lys Val Glu Asn Lys
 115 120 125
 Thr Lys
 130

<210> 5687
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 5687
 Asn Asn Met Ser Pro Arg Lys Leu Met Phe Trp Leu Phe Ala Cys Ile
 1 5 10 15
 Phe Leu Val Cys Ala Leu Arg Ala Gly Leu Leu Thr Ser Ala Asp Gln
 20 25 30
 Tyr Ile Tyr His Leu Arg Asn Met His Ala Ser Thr Phe Ala Tyr Arg
 35 40 45
 Tyr Asp Asp Phe Leu Pro Tyr Leu Pro Ile Val Ala Met Phe Val Leu
 50 55 60
 Lys Leu Thr Gly Val Lys Ser Arg Ser Asn Trp Lys Arg Met Leu Val
 65 70 75 80
 Ser Thr Ala Phe Ser Tyr Ile Leu Met Gly Ala Ile Val Leu Thr Met
 85 90 95
 Lys Ser Leu Ala Gly Val Leu Arg Pro Asp Gly Ser Asp Phe Leu Ser
 100 105 110
 Phe Pro Ser Gly His Thr Ala Thr Ala Phe Thr Ala Ala Thr Leu Leu
 115 120 125
 Tyr Lys Glu Tyr Gly Phe Lys Thr Pro Leu Ala Gly Ile Ala Thr Phe
 130 135 140
 Leu Pro Ala Val Val Thr Gly Phe Thr Arg Gln Leu Asn Asn Arg His
 145 150 155 160
 Trp Leu Ser Asp Val Leu Ala Gly Ala Ile Ile Gly Ile Met Met Val
 165 170 175
 Glu Leu Ala Tyr Phe Leu Thr Asp Arg Leu Leu Met Lys Thr Gly Ala
 180 185 190
 Gln Thr Cys Ser Lys Ser

195

<210> 5688

<211> 532

<212> PRT

<213> B.fragilis

<400> 5688

Lys	Leu	Ser	Gly	Tyr	Lys	Asp	Lys	Ala	Tyr	Leu	Cys	Asn	Val	Phe	Leu
1				5					10					15	
Ile	Gln	Val	Thr	Met	Asp	Tyr	Pro	His	Lys	Ile	Asn	Lys	Val	Gln	Ile
			20					25					30		
Arg	Asn	Leu	Gln	Ile	Glu	Asp	Tyr	Ala	Gln	Leu	Ser	Gln	Ser	Phe	Thr
		35					40					45			
Arg	Val	Tyr	Ser	Asp	Gly	Ser	Asp	Val	Phe	Trp	Thr	His	Glu	Gln	Ile
	50					55					60				
Glu	Lys	Leu	Ile	Lys	Ile	Phe	Pro	Glu	Gly	Gln	Ile	Val	Thr	Val	Val
65					70					75					80
Asp	Glu	Lys	Ile	Val	Gly	Cys	Ala	Leu	Ser	Ile	Ile	Val	Glu	Tyr	Asp
				85					90					95	
Lys	Val	Lys	Asn	Asp	His	Thr	Tyr	Ala	Gln	Val	Thr	Gly	Lys	Glu	Thr
			100					105						110	
Phe	Asn	Thr	His	Ser	Pro	Gln	Gly	Asn	Ile	Leu	Tyr	Gly	Ile	Glu	Val
		115					120					125			
Phe	Ile	His	Pro	Glu	Tyr	Arg	Gly	Leu	Arg	Leu	Ala	Arg	Arg	Met	Tyr
	130					135					140				
Glu	Tyr	Arg	Lys	Glu	Leu	Cys	Glu	Thr	Leu	Asn	Leu	Lys	Ala	Ile	Met
145					150						155				160
Phe	Gly	Gly	Arg	Ile	Pro	Asn	Tyr	His	Lys	Tyr	Ala	Asp	Lys	Met	Arg
				165					170					175	
Pro	Lys	Glu	Tyr	Ile	Asp	Arg	Val	Arg	Gln	Arg	Glu	Ile	Tyr	Asp	Pro
			180					185						190	
Val	Leu	Thr	Phe	Gln	Leu	Ser	Asn	Asp	Phe	His	Val	Arg	Lys	Val	Met
	195						200					205			
Thr	Asn	Tyr	Leu	Pro	Asn	Asp	Glu	Glu	Ser	Lys	His	Tyr	Ala	Cys	Leu
	210					215						220			
Leu	Gln	Trp	Asp	Asn	Ile	Tyr	Tyr	Gln	Pro	Pro	Thr	Gln	Glu	Tyr	Leu
225					230						235				240
Ala	Pro	Lys	Thr	Thr	Val	Arg	Val	Gly	Leu	Val	Gln	Trp	Gln	Met	Arg
				245					250					255	
Ser	Tyr	Lys	Thr	Leu	Asp	Asp	Leu	Phe	Glu	Gln	Val	Glu	Phe	Phe	Val
			260					265						270	
Asp	Ala	Val	Ser	Asp	Tyr	Lys	Ser	Asp	Phe	Val	Leu	Phe	Pro	Glu	Tyr
		275					280					285			
Phe	Asn	Ala	Pro	Leu	Met	Ser	Lys	Tyr	Asn	Asp	Lys	Gly	Glu	Ser	Gln
	290					295					300				
Ala	Ile	Arg	Gly	Leu	Ala	Gln	Tyr	Thr	Glu	Glu	Ile	Arg	Asp	Arg	Phe
305					310						315				320
Ile	Asn	Leu	Ala	Ile	Ser	Tyr	Asn	Ile	Asn	Ile	Ile	Thr	Gly	Ser	Met
				325					330					335	
Pro	Leu	Ile	Lys	Glu	Asp	Gly	Leu	Leu	Tyr	Asn	Ala	Gly	Phe	Leu	Cys
			340					345					350		
Arg	Arg	Asp	Gly	Thr	Tyr	Glu	Met	Tyr	Glu	Lys	Leu	His	Val	Thr	Pro
		355					360						365		
Asp	Glu	Ile	Lys	Ser	Trp	Gly	Leu	Ser	Gly	Gly	Lys	Gln	Leu	Lys	Thr
	370					375					380				
Phe	Asp	Thr	Asp	Cys	Ala	Lys	Ile	Gly	Ile	Leu	Ile	Cys	Tyr	Asp	Val
385					390					395					400
Glu	Phe	Pro	Glu	Leu	Ser	Arg	Leu	Met	Ala	Asp	Gln	Gly	Met	Gln	Ile

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<210> 5689
<211> 139
<212> PRT
<213> B.fragilis
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<210> 5690
<211> 430
<212> PRT
<213> B.fragilis
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<400> 5690															
Val	Phe	Gln	Gly	Gly	Ile	Leu	Phe	Phe	Leu	Leu	Leu	Tyr	Arg	Cys	Asn
1				5					10					15	
Arg	Glu	Ile	Ile	Ser	Phe	Phe	Ile	Lys	Leu	Ile	Met	Asn	Asn	Trp	Lys
			20					25					30		
Lys	Lys	Phe	Ile	Ile	Ile	Trp	Thr	Gly	Gln	Leu	Phe	Ser	Ile	Leu	Ser
		35				40						45			
Ser	Ser	Ile	Ala	Gln	Phe	Ser	Ile	Val	Leu	Trp	Ile	Ser	Leu	Lys	Thr
	50					55					60				
Gly	Ser	Ala	Glu	Val	Leu	Ser	Phe	Ala	Thr	Ile	Ala	Ala	Leu	Leu	Pro
65				70					75						80

Gln Ala Leu Leu Gly Pro Phe Ala Gly Val Phe Val Asp Arg Trp Asn
 85 90 95
 Arg Lys Trp Thr Met Ile Gly Ala Asp Ser Phe Val Ala Leu Cys Ser
 100 105 110
 Gly Val Ile Ala Leu Leu Phe Tyr Leu Asp Ile Ile Glu Leu Trp His
 115 120 125
 Ile Tyr Leu Leu Leu Met Leu Arg Ser Val Gly Gly Ala Phe His Thr
 130 135 140
 Pro Ala Met Lys Ser Ser Val Pro Leu Leu Ala Pro Glu Lys Glu Leu
 145 150 155 160
 Met Arg Ile Ala Gly Ile Asn Gln Ala Ile Gln Ser Ile Cys Asn Ile
 165 170 175
 Gly Gly Pro Ala Leu Gly Ala Ile Leu Leu Leu Ala Phe Asp Met Ser
 180 185 190
 Leu Val Met Leu Leu Asp Val Leu Gly Ala Ile Ile Ala Cys Thr Ala
 195 200 205
 Leu Leu Phe Val Tyr Ile Pro Asn Pro Lys Gln Glu Asn Thr Ser Ala
 210 215 220
 Lys Asn Val Leu Tyr Asp Met Arg Asp Gly Phe Asn Val Ile Met Arg
 225 230 235 240
 Asn Lys Gly Val Ser Trp Val Met Val Thr Glu Val Leu Val Thr Phe
 245 250 255
 Phe Val Met Pro Met Val Ala Leu Met Pro Leu Met Thr Leu Lys Asn
 260 265 270
 Phe Ser Gly Thr Ala Tyr Gln Val Ser Leu Ile Glu Thr Leu Phe Gly
 275 280 285
 Ala Gly Met Leu Ala Gly Gly Ala Leu Leu Gly Val Trp Asn Pro Lys
 290 295 300
 Ile Arg Lys Thr Leu Leu Ile Ala Ile Ser Tyr Phe Leu Leu Gly Ala
 305 310 315 320
 Ala Leu Ala Phe Cys Gly Ile Leu Pro Ala Asp Gly Phe Val Leu Phe
 325 330 335
 Ala Ala Leu Thr Val Ala Gln Gly Ile Val Val Pro Phe Phe Ser Gly
 340 345 350
 Pro Phe Thr Ser Leu Leu Gln Thr Gln Phe Lys Pro Ala Tyr Leu Gly
 355 360 365
 Arg Val Phe Ser Leu Phe Asp Ser Val Ser Leu Leu Pro Ser Ile Ile
 370 375 380
 Gly Leu Phe Ile Thr Gly Phe Ile Ala Asp Ser Leu Gly Ile Ala Asn
 385 390 395 400
 Ile Phe Ile Cys Cys Gly Ile Ala Ile Val Phe Thr Ser Ile Leu Met
 405 410 415
 Met Cys Ile Pro Ala Val Arg Asp Leu Glu Lys Gln Ser Lys
 420 425 430

<210> 5691
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 5691
 Glu Tyr Ile Ile Pro Ile Tyr Tyr Pro Ile Lys Ile Arg Leu Leu Phe
 1 5 10 15
 Asp Ile His Asn Ile Ile Met Ile Lys Lys Glu Asn Lys Ile Phe Val
 20 25 30
 Val Ile Ser Pro Asp Pro Val Glu Arg Glu Gln Leu Ile Ala Arg Leu
 35 40 45
 Ala Val Arg Leu Gly Phe Ala Lys Ile Pro Ser Asp Ala Leu Lys Ile
 50 55 60

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Ile Ser Lys Asp Ile Tyr Ser Phe Asp Leu Ala Thr Ala Tyr Phe Val
65          70          75          80
Leu Cys Ser Asn Tyr His Phe Arg Gly Ser Ile Val Thr Thr Gln Arg
          85          90          95
Leu Tyr Glu Leu Ala Ala Arg Gly Ile Cys Val Cys Val Gly Val Lys
          100        105          110
Ser Leu Pro Arg Glu Tyr Glu Leu Leu Ser Gln Val Phe Tyr Pro Asn
          115        120        125
Asp Leu Arg
          130

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<210> 5692
 <211> 431
 <212> PRT
 <213> B.fragilis

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<400> 5692
Thr Leu Thr Ile Lys Lys Ser Ile Gln Met Ala Ala Asn Lys Leu Ile
1          5          10          15
Asp Val Ser Lys Leu Asn Glu Ala Leu Val Ile Tyr Asp Gln Ala Leu
          20          25          30
Arg Ala Leu Pro Phe Ala Thr Leu Thr Glu Val Ala Asn Leu Leu Lys
          35          40          45
Leu Asn Val Met Asp Leu Gln Gly Lys His Ala Arg Ile Asn Glu Arg
          50          55          60
Arg Arg Ala Gly Gly Thr Gln Ser Tyr Lys Ile Gly Lys Asn Phe Gly
65          70          75          80
Leu Val Asp Lys Leu Leu Gly Tyr Glu Pro Ser Val Ile Glu Pro Lys
          85          90          95
Asp Val Val Cys Ile Thr Lys Glu Asn Ser Gln Lys Tyr Asp Asp Asn
          100        105        110
Glu Leu Leu Ile Ile Gly Gly Thr Pro Val Ser Asn Thr Thr Lys Lys
          115        120        125
His Pro Met Glu Thr Lys Val Ala Phe Thr Leu Val Arg Ser His Leu
          130        135        140
Glu Asp Ile Val Tyr Ser Leu Phe Ser Ala Glu Arg Asp Glu Asp Ser
145          150        155        160
Asn Ser Pro Gly Gly Ala Phe Asp Gly Ile Tyr Thr Lys Met Asp Met
          165        170        175
Leu Ile Thr Arg Gly Asp Val Asn Ala Ala Arg Gly Asn Phe Ser Ile
          180        185        190
Ser Gly Glu Phe Ala Ala Pro Thr Ser Asp Thr Asp Tyr Thr Ala Tyr
          195        200        205
Glu Asn Leu Val Glu Trp Ile Gly Gly Ala Asn Thr Tyr Leu Arg Ser
          210        215        220
Ser Ile Gly Gly Val Pro Gln Leu Leu Cys Ala Glu Thr Val Leu Lys
225          230        235        240
Ala Ala Arg Ser Ala Leu Arg Asn Lys Leu Arg Met Gln Glu Tyr Pro
          245        250        255
Ser Met Gln Arg Met Leu Glu Leu Leu Arg Glu Asp Ala Met Cys Pro
          260        265        270
Asn Leu Ile Val Ser Ser His Glu Ala Leu Gly Gln Gly Ser Arg Leu
          275        280        285
Thr Leu Gln Lys Val Gly Asn Ile Asp Val Ala Phe Asn Thr Gln Ala
          290        295        300
Ala Ser Lys Phe Cys Gln Ile Arg Asp Ile Tyr Glu Asp Pro Asn Glu
305          310        315        320
Trp Gln Phe Trp Leu Gln Ala Gly Tyr Asp Thr Arg Ile Asn Asp Trp
          325        330        335

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His Glu Lys Val Phe Arg Cys Asn Glu Gln Lys Asn Glu Ser Leu Asp
 340 345 350
 Leu Ala Gly Asp Tyr Cys Lys Thr Gly Gly Val Gln Val Ala Ile Thr
 355 360 365
 Gly Thr Asp Lys Gly Gln Trp Ser Ile Gln Gly Lys Val Ala Lys Arg
 370 375 380
 Gly Asn Gly Gln Cys Ile Ile Gly Leu Pro Pro Gly Lys Tyr Thr Ile
 385 390 395 400
 Glu Phe Thr Asp Ala Asp Gly Lys Thr Lys Pro Ala Asn Thr Gln Val
 405 410 415
 Thr Val Val Ala Gly Glu Val Ala Thr Ala Thr Gly Ala Tyr Thr
 420 425 430

<210> 5693
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 5693
 Val Leu Tyr Ile Met Glu Gln Leu Phe Glu Ala Ile Leu Ala Ile Ala
 1 5 10 15
 Lys Gln Asn Pro Asp Gly Phe Thr Val Asp Leu Thr Thr Leu Lys Lys
 20 25 30
 Val Thr Lys Gly Ile Ser Val Ala Tyr Leu Glu Thr Gln Asp Ser Phe
 35 40 45
 Gly Glu Glu Gly Leu Lys Arg Val Leu Asn His Ala Glu Met His Glu
 50 55 60
 Lys Lys Val Gly Gly Trp Leu Asn Glu Glu Asn Gln Glu Phe Tyr Phe
 65 70 75 80
 Asp Ser Val Arg Ile Phe Thr Asn Leu Glu Glu Ala Lys Arg Phe Gly
 85 90 95
 Cys Glu Asn Lys Gln Ile Ala Ile Phe Asp Ile Ser His Met Arg Leu
 100 105 110
 Ile Lys Leu
 115

<210> 5694
 <211> 255
 <212> PRT
 <213> B.fragilis

<400> 5694
 Tyr Leu Tyr Ile Cys Ser Asn Gln Arg Leu Asn Ile Met His Asp Ile
 1 5 10 15
 Pro Lys Gln Ile Pro Leu Ala Asn Asn His Ile Ser Val Asp Cys Val
 20 25 30
 Val Ile Gly Phe Asp Gly Glu Gln Leu Lys Val Leu Leu Ile Asn Arg
 35 40 45
 Ile Gly Glu Glu Asn Gly Lys Val Tyr Arg Asp Met Lys Leu Pro Gly
 50 55 60
 Ser Leu Ile Tyr Met Asp Glu Asp Leu Asp Glu Ala Ala Gln Arg Val
 65 70 75 80
 Leu Phe Glu Leu Thr Gly Ile Arg Asn Val Asn Leu Met Gln Phe Lys
 85 90 95
 Ala Phe Gly Ser Lys Asn Arg Thr Ser Asn Pro Lys Asp Val His Trp
 100 105 110
 Leu Glu Arg Ala Met Gln Ser Lys Val Glu Arg Ile Val Thr Ile Ala
 115 120 125
 Tyr Leu Ser Met Val Lys Ile Asp Arg Ala Leu Asp Lys Asn Leu Asp

130	135	140
Glu Phe Gln Ala Cys Trp Val Ala Leu Lys Asp Ile Lys Thr Leu Ala		
145	150	155
Phe Asp His Asn Leu Ile Ile Arg Glu Ala Leu Thr Tyr Ile Arg Gln		160
	165	170
Phe Val Glu Phe Asn Pro Ser Met Leu Phe Asp Leu Leu Pro Arg Lys		175
	180	185
Phe Thr Ala Ser Gln Leu Arg Ile Leu Phe Glu Leu Val Tyr Asp Lys		190
195	200	205
Ala Val Asp Val Arg Asn Phe His Lys Lys Ile Ala Leu Met Asp Tyr		
210	215	220
Val Val Pro Leu Glu Glu Lys Gln Thr Gly Val Ala His Arg Ala Ala		
225	230	235
Arg Tyr Tyr Lys Phe Asp Arg Lys Ile Tyr Asn Lys Thr Arg Arg		240
	245	250
		255

<210> 5695

<211> 773

<212> PRT

<213> B.fragilis

<400> 5695

Lys Pro Tyr Met Lys Lys Gly Ile Leu Tyr Thr Ile Leu Leu Tyr Leu		
1	5	10
Ala Leu Ser Leu Ala Ser Cys Ser Ala Thr Lys Phe Val Pro Asp Gly		15
	20	25
Ser Tyr Leu Leu Asp Glu Val Lys Ile His Thr Asp Asn Lys Glu Ile		30
	35	40
Lys Pro Ser Asp Met Arg Leu Tyr Val Arg Gln Asn Pro Asn Ser Lys		45
	50	55
Trp Phe Ser Thr Ile Lys Thr Gln Leu Tyr Val Tyr Asn Trp Ser Gly		60
65	70	75
Arg Asp Ser Thr Lys Trp Phe Asn Arg Phe Leu Arg Lys Ile Gly Asp		80
	85	90
Ala Pro Val Ile Tyr Asn Glu Ser Asp Ala Ile Arg Ser Gln Glu Glu		95
	100	105
Ile Ala Lys Ala Val Gln Asn Leu Gly Tyr Met Gly Ala Ser Val Lys		110
	115	120
Arg Thr Thr Lys Thr Lys Lys Lys Leu Lys Leu Phe Tyr Glu Ile		125
	130	135
Thr Ser Gly Lys Pro Tyr Ile Val Arg Thr Leu Lys Tyr Asp Ile Ser		140
145	150	155
Asp Lys Lys Ile Ala Glu Tyr Leu Arg Asn Asp Ser Thr Gln Ser Met		160
	165	170
Leu Arg Glu Gly Met Leu Phe Asp Val Asn Val Leu Asp Ala Glu Arg		175
	180	185
Gln Arg Ile Thr Asp Tyr Leu Leu Cys Asn Gly Tyr Tyr Lys Phe Asn		190
	195	200
Lys Asp Tyr Ile Thr Tyr Thr Ala Asp Thr Ala Arg Asn Thr His Gln		205
	210	215
Val Asp Leu Thr Leu His Leu Leu Pro Tyr Lys Thr Tyr Val Gly Asp		220
225	230	235
Thr Pro Lys Glu His Phe Gln Tyr Lys Ile Asn Lys Ile Asn Phe Ile		240
	245	250
Thr Asp Tyr Asp Val Leu Gln Ser Ser Ala Leu Ser Ser Ile Glu Ile		255
	260	265
Asn Asp Ser Leu His Tyr Asn Gly Phe Pro Ile Tyr Tyr Lys Asp Lys		270
	275	280
Leu Tyr Leu Arg Pro Lys Val Leu Val Asp Asn Leu Arg Phe Ala Ser		285

290	295	300
Gly Asp Leu Tyr Asp	Glu Arg Asn Val Gln Lys	Thr Tyr Thr Tyr Phe
305	310	315
Gly Arg Leu Ser Ala	Leu Lys Tyr Thr Asn Ile	Arg Phe Phe Glu Thr
325	330	335
Gln Asn Gly Asp Ser Thr	Gln Leu Asn Cys Tyr Val Met	Leu Thr Lys
340	345	350
Ser Lys His Lys Ser Ile	Ser Phe Glu Leu Glu Gly Thr	Asn Ser Ala
355	360	365
Gly Asp Leu Gly Ala Ala	Ala Ser Val Ser Phe Gln His	Arg Asn Leu
370	375	380
Phe Arg Gly Ser Glu Thr	Phe Met Val Lys Phe Arg Gly Ala Tyr Glu	400
385	390	395
Ala Ile Ser Gly Leu Gln	Pro Gly Tyr Lys Asn His Asn Tyr Thr Glu	415
405	410	415
Tyr Gly Val Glu Thr Ser	Ile Asn Phe Pro Asn Phe Leu Phe Pro Phe	430
420	425	430
Leu Thr Ser Asp Phe Lys	Arg Arg Ile Lys Ala Thr Thr Glu Phe Gly	445
435	440	445
Leu Gln Tyr Asn Tyr Gln	Leu Arg Pro Glu Phe Ser Arg Thr Ile Ala	460
450	455	460
Ser Ala Ser Trp Ser Tyr	Lys Trp Ile Gln Lys Gln Lys Ile Gln His	480
465	470	475
Arg Ile Asp Leu Leu Asp	Ile Ser Tyr Leu Tyr Leu Pro Trp Ile Ser	495
485	490	495
Ser Gln Phe Gln Glu Asp	Tyr Ile Asn Lys Asp Lys Asp Asn Tyr Ile	510
500	505	510
Leu Lys Tyr Asn Tyr Glu	Asn Arg Leu Ile Val Arg Met Gly Tyr Asn	525
515	520	525
Tyr Ser Tyr Asn Ser Ala	Gly Gly Thr Leu Val Asn Asn Thr Ile Thr	540
530	535	540
Thr Asn Ser Tyr Ser Ile	Arg Ala Gly Phe Glu Ser Ala Gly Asn Ile	560
545	550	555
Leu Tyr Gly Ile Ser Lys	Met Ile Asn Met Arg Lys Asn Lys Asp Gly	575
565	570	575
Glu Tyr Ala Ile Leu Gly	Ile Pro Tyr Ala Gln Tyr Leu Lys Gly Asp	590
580	585	590
Phe Asp Phe Ala Lys Asn	Ile Ile Asp His Arg Asn Ser Leu Ala	605
595	600	605
Phe His Ala Gly Ile Gly	Ile Ala Val Pro Tyr Gly Asn Ala Lys Val	620
610	615	620
Val Pro Phe Glu Lys Arg	Tyr Phe Ser Gly Gly Ala Asn Ser Val Arg	640
625	630	635
Gly Trp Ser Val Arg Asn	Leu Gly Pro Gly Ser Phe Ala Gly Asp Gly	655
645	650	655
Asn Phe Met Asn Gln Ser	Gly Asp Ile Lys Leu Asp Ala Ser Ile Glu	670
660	665	670
Tyr Arg Thr Arg Leu Phe	Trp Lys Phe Arg Gly Ala Ala Phe Ile Asp	685
675	680	685
Ala Gly Asn Ile Trp Thr	Ile Arg Glu Tyr Glu Asn Gln Pro Gly Gly	700
690	695	700
Val Phe Glu Phe Asp Lys	Phe Tyr Lys Gln Ile Ala Val Ala Tyr Gly	720
705	710	715
Leu Gly Leu Arg Leu Asp	Leu Asp Phe Phe Val Leu Arg Phe Asp Gly	735
725	730	735
Gly Met Lys Ala Ile Asn	Pro Lys Tyr Lys Lys Ala Lys Glu Arg Tyr	750
740	745	750
Pro Ile Ile His Pro Arg	Phe Ser Arg Asp Phe Ala Phe His Phe Ala	765
755	760	765

Val Gly Tyr Pro Phe
770

<210> 5696

<211> 88

<212> PRT

<213> B.fragilis

<400> 5696

His	Tyr	Arg	Ile	Met	Pro	Ser	Asp	Arg	Ile	His	Gln	Ser	Lys	Val	Trp
1				5					10					15	
Glu	Leu	Met	Glu	Gln	Arg	Lys	Glu	Gly	Lys	Pro	Ile	Glu	Phe	Ser	Ile
			20					25					30		
Glu	Phe	Cys	Lys	Lys	Ser	Thr	Gly	Glu	Leu	Ile	Thr	Tyr	Glu	Arg	Ala
			35				40					45			
Val	Leu	Ser	Ser	Phe	His	Ser	Ser	Gly	Ser	Thr	Val	Asn	Ile	Leu	Gln
	50					55					60				
Ile	Gly	Glu	Tyr	Ala	Pro	Arg	Lys	Ile	Arg	Arg	Cys	Leu	Ile	Thr	Arg
65					70				75						80
Phe	Asn	Asn	Ile	Lys	Val	Tyr	Phe								
				85											

<210> 5697

<211> 509

<212> PRT

<213> B.fragilis

<400> 5697

Tyr	Leu	Leu	Ile	Ile	Ser	Pro	Tyr	Phe	Thr	Val	Cys	Arg	Leu	Leu	Leu
1				5					10					15	
Pro	Ala	Asp	Arg	Asn	Ser	Lys	Lys	Ala	Asn	Ala	Met	Asn	His	Thr	Asn
			20					25					30		
Glu	Gly	Ser	Lys	Leu	Tyr	Leu	Tyr	Ser	Ile	Thr	Ser	Val	Ala	Ile	Leu
			35				40					45			
Gly	Gly	Leu	Leu	Phe	Gly	Tyr	Asp	Thr	Ala	Val	Ile	Ser	Gly	Ala	Glu
	50					55					60				
Lys	Gly	Leu	Glu	Ala	Phe	Leu	Thr	Ala	Thr	Asp	Phe	Gln	Tyr	Asp	
65					70				75					80	
Lys	Val	Met	His	Gly	Ile	Thr	Ser	Ser	Ser	Ala	Leu	Ile	Gly	Cys	Val
				85					90					95	
Leu	Gly	Gly	Ala	Leu	Ser	Gly	Ile	Phe	Ala	Ser	Arg	Leu	Gly	Arg	Arg
			100					105					110		
Asn	Ser	Leu	Arg	Leu	Ala	Ala	Val	Leu	Phe	Phe	Leu	Ser	Ala	Leu	Gly
			115				120					125			
Ser	Tyr	Tyr	Pro	Glu	Phe	Leu	Phe	Phe	Glu	Tyr	Gly	Lys	Ala	Asn	Met
	130					135					140				
Asn	Leu	Leu	Ile	Thr	Phe	Asn	Leu	Tyr	Arg	Ile	Leu	Gly	Gly	Ile	Gly
145					150				155					160	
Val	Gly	Leu	Ala	Ser	Ala	Val	Cys	Pro	Met	Tyr	Ile	Ala	Glu	Ile	Ala
			165					170					175		
Pro	Ser	Asn	Ile	Arg	Gly	Thr	Leu	Val	Ser	Cys	Asn	Gln	Phe	Ala	Ile
			180					185					190		
Ile	Phe	Gly	Met	Leu	Val	Val	Tyr	Phe	Val	Asn	Tyr	Leu	Ile	Leu	Gly
			195				200					205			
Asp	His	Gln	Asn	Pro	Val	Ile	Leu	Lys	Asp	Ala	Ala	Gly	Thr	Leu	Ser
	210					215					220				
Val	Ser	Ser	Glu	Ser	Asp	Met	Trp	Thr	Val	Thr	Glu	Gly	Trp	Arg	Tyr
225					230					235				240	
Met	Phe	Gly	Ser	Glu	Ala	Phe	Pro	Ala	Ala	Phe	Phe	Gly	Met	Leu	Leu

245 250 255
 Phe Phe Val Pro Lys Thr Pro Arg Tyr Leu Val Met Ile Asp Gln Asp
 260 265 270
 Gln Lys Ala Tyr Ser Ile Leu Lys Val Asn Gly Ala Thr Lys Ala
 275 280 285
 Gln Glu Ile Leu Ala Glu Ile Lys Ala Thr Ser Gln Glu Lys Thr Glu
 290 295 300
 Lys Leu Phe Thr Tyr Gly Ala Ala Val Ile Val Ile Gly Ile Leu Leu
 305 310 315 320
 Ser Val Phe Gln Gln Ala Ile Gly Ile Asn Ala Val Leu Tyr Tyr Ala
 325 330 335
 Pro Arg Ile Phe Glu Asn Ala Gly Ala Glu Gly Gly Gly Met Met Gln
 340 345 350
 Thr Val Ile Met Gly Ile Val Asn Ile Val Phe Thr Leu Ile Ala Ile
 355 360 365
 Phe Thr Val Asp Arg Phe Gly Arg Lys Pro Leu Leu Ile Ile Gly Ser
 370 375 380
 Val Gly Met Ala Val Gly Ala Phe Ala Val Ala Leu Cys Asp Ser Met
 385 390 395 400
 Gly Ile Lys Gly Ile Leu Pro Val Leu Ser Val Ile Val Tyr Ala Ala
 405 410 415
 Phe Phe Met Met Ser Trp Gly Pro Ile Cys Trp Val Leu Ile Ser Glu
 420 425 430
 Ile Phe Pro Asn Thr Ile Arg Gly Lys Ala Val Ala Ile Ala Val Ala
 435 440 445
 Phe Gln Trp Ile Phe Asn Tyr Ile Val Ser Ser Thr Phe Pro Ala Leu
 450 455 460
 Tyr Asp Phe Ser Pro Met Phe Ala Tyr Ser Leu Tyr Gly Ile Ile Cys
 465 470 475 480
 Val Ile Ala Ala Leu Phe Val Trp Arg Trp Val Pro Glu Thr Lys Gly
 485 490 495
 Lys Thr Leu Glu Asp Met Ser Lys Leu Trp Lys Arg Arg
 500 505

<210> 5698

<211> 196

<212> PRT

<213> B.fragilis

<400> 5698

Asn Tyr Val Met Asp Glu Glu Val Lys Gly Phe Asn Arg Tyr Met Ser
 1 5 10 15
 Lys Val Asp Phe Gln Pro Val Thr Glu Phe Ile Phe Gln Asn Gly Gln
 20 25 30
 Leu Thr Asp Tyr Lys Lys Gly Glu Phe Phe Ser Arg Gln Asn Glu Ser
 35 40 45
 Cys Lys Met Val Gly Tyr Val Thr Glu Gly Ser Phe Arg Tyr Cys Cys
 50 55 60
 Thr Asp Ser Arg Gly Gly Ser Lys Ile Val Gly Tyr Thr Phe Asp His
 65 70 75 80
 Ser Phe Val Gly Asn Tyr Pro Ala Phe Arg Leu Gly Asp Asn Ser Asn
 85 90 95
 Val Asp Ile Gln Ala Ile Cys Asn Cys Ser Val Tyr Val Ile Asn Asn
 100 105 110
 Arg Gln Leu Glu Glu Phe Tyr Ser Arg Asn Glu Ala Asn Gln Lys Leu
 115 120 125
 Gly Arg Gln Ile Ala Glu Ile Leu Leu Trp Glu Val Tyr Glu Arg Met
 130 135 140
 Ile Ser Leu Tyr Ser Met Thr Pro Glu Glu Arg Tyr Thr Glu Ile Leu

145 150 155 160
 Lys Arg Cys Pro Glu Leu Leu Asn Leu Ile Ser Leu Lys Glu Leu Ala
 165 170 175
 Ser Tyr Leu Met Ile Cys Pro Glu Thr Leu Ser Arg Leu Arg Arg Lys
 180 185 190
 Leu Val Gln Lys
 195

<210> 5699
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 5699
 Asp Leu Arg Met Ala Tyr Arg Trp Gln Ile Met Lys Asn Glu Thr Ala
 1 5 10 15
 Phe Ser Met Ala Gly Ile Tyr Asp Ile Gly Val Asp Lys Glu Ser Gly
 20 25 30
 Lys Gln His Ala Thr Phe Ser Ile Ile Thr Ile Val Thr Asp Pro Leu
 35 40 45
 Thr Asp Tyr Ile His Asn Thr Lys Tyr Arg Met Pro Val Ile Phe Val
 50 55 60
 Ile Gln Arg
 65

<210> 5700
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 5700
 Tyr Lys Leu Ile Ala Leu Leu Tyr Val Tyr Trp His Ile Phe Thr Tyr
 1 5 10 15
 Phe Ala Pro Tyr Lys Gly Thr Thr Met His Lys Lys Leu Leu Val Thr
 20 25 30
 Ala Tyr Phe Val Ile Ala Ala Leu Leu Gln Thr Leu Ala Gly Asn Phe
 35 40 45
 Pro Leu Ser Phe Phe Ala Phe Pro Leu Asn Val Ile Val Ala Val Ile
 50 55 60
 Trp Ile Tyr Ser Leu Trp Arg Leu Tyr Lys Glu Gly Asn Lys Leu Pro
 65 70 75 80
 Leu Thr Arg Phe Leu Leu Ser Ser Arg Thr Ser Val Leu Ser Ile Leu
 85 90 95
 Leu Leu Ile Gly Gly Ser Leu Val Ile Gly Leu Phe Pro Gln Leu Ser
 100 105 110
 Glu Ala Glu Ala Asp Ser Met Pro Gly Val Leu Ala Ser Leu Gly Cys
 115 120 125
 Tyr Asn Phe Met Thr Ser Trp Ile Phe Ile Ala Ile Leu Phe Leu Leu
 130 135 140
 Leu Ser Asn Leu Ala Met Val Ile Ile His Ala Phe Tyr His Cys Val
 145 150 155 160
 Pro Ala Lys Lys Arg Phe Ile Leu Asn His Leu Gly Leu Trp Leu Ala
 165 170 175
 Leu Phe Ala Gly Phe Phe Gly Ser Ser Asp Val Gln Thr Leu Arg Ile
 180 185 190
 Pro Leu Tyr Thr Gly Gln Pro Gly Arg Glu Ala Tyr Ser Met Asp Gly
 195 200 205
 Lys Ala Tyr Tyr Leu Asp Tyr Glu Leu Glu Leu Tyr Ser Phe Asn Thr
 210 215 220

Glu Tyr Tyr Pro Asn Gly Met Pro Ser Arg Phe Ala Ala Asp Val Arg
 225 230 235 240
 Ile Gly Asn Arg Arg Thr Thr Leu Glu Val Asn His Pro His Cys Tyr
 245 250 255
 Arg Leu Gly Glu Asp Ile Tyr Leu Thr Gly Tyr Asp Thr Arg Asn Met
 260 265 270
 Gly Asn Thr Arg Tyr Cys Ile Leu Gln Ile Val Arg Gln Pro Trp Lys
 275 280 285
 Tyr Val Met Val Val Gly Ile Leu Met Met Leu Thr Gly Ala Val Leu
 290 295 300
 Leu Phe Ile Asn Gly Pro Lys Lys Leu Lys His Asp Asn Leu Gly
 305 310 315

<210> 5701
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 5701
 Phe Lys Ser Ile Lys Glu Met Asn Lys Ser Tyr Phe Glu Thr Arg Lys
 1 5 10 15
 Thr Glu Ile Gln Ser Glu Ile Asp Ser Trp Lys Gln Gly Leu Arg Asp
 20 25 30
 Leu Glu Asp Glu Tyr Ile Ser Ser Asn Gln Lys Phe Pro Ile Gly Ser
 35 40 45
 Lys Val Cys Ile Thr Thr Pro Ala His Glu Gly Trp Ala Leu Ser Thr
 50 55 60
 Arg Glu Lys Ile Thr Phe Pro Glu Arg Lys Arg Tyr Ser Tyr Val Thr
 65 70 75 80
 Gly Tyr Glu Ile Cys His Asn Glu Val Val Pro Ile Leu Met Lys Ala
 85 90 95
 Lys Lys Asp Gly Thr Ile Ser Lys Ile Arg Asp Tyr Ile Thr Leu Glu
 100 105 110
 Arg Val Ile Val Glu Leu Ala
 115

<210> 5702
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 5702
 Phe Pro Pro Ile Leu Tyr Val Ile Pro Leu Asn Val Ser Asn Met Glu
 1 5 10 15
 Lys Val Leu Gln Cys Val Arg Leu Pro Gln Asn Gly Lys Gly Thr Ile
 20 25 30
 Gly Phe Asn Leu Lys Gly Glu Tyr Leu Lys Lys Tyr Gly Phe Gln Leu
 35 40 45
 Gly Asp Lys Val Lys Val Glu Ile Ser Lys Asn Lys Ile Val Leu Phe
 50 55 60
 Lys Thr Gly Asn Val Leu Glu
 65 70

<210> 5703
 <211> 1149
 <212> PRT
 <213> B.fragilis

<400> 5703

Val Gln Lys Ala His Ile Glu Ala Val Lys Val Leu Ile Met Ser Glu
 945 950 955 960
 Val Asn Val Lys Glu Ile Lys Phe Val Asp Gly Ala Ala Gly Val Leu
 965 970 975
 Val Lys Lys Val Lys Cys Asp Phe Lys Lys Leu Gly Pro Lys Phe Gly
 980 985 990
 Lys Gln Met Lys Ala Val Ala Ala Ala Val Ala Glu Met Ser Gln Glu
 995 1000 1005
 Ala Ile Ala Glu Leu Glu Lys Asn Gly Lys Tyr Thr Phe Asp Leu Gly
 1010 1015 1020
 Gly Ala Glu Ala Val Ile Glu Ser Ala Asp Val Glu Ile Phe Ser Glu
 1025 1030 1035 1040
 Asp Ile Pro Gly Trp Leu Val Ala Asn Glu Gly Lys Leu Thr Val Ala
 1045 1050 1055
 Leu Glu Val Thr Val Thr Asp Glu Leu Arg Arg Glu Gly Ile Ala Arg
 1060 1065 1070
 Glu Leu Val Asn Arg Ile Gln Asn Ile Arg Lys Ser Ser Gly Phe Glu
 1075 1080 1085
 Ile Thr Asp Lys Ile Lys Leu Thr Leu Ser Lys Asn Pro Gln Thr Asp
 1090 1095 1100
 Asp Ala Val Asn Glu Tyr Asn Ser Tyr Ile Cys Asn Gln Val Leu Gly
 1105 1110 1115 1120
 Thr Ser Leu Thr Leu Ala Asp Glu Val Lys Asp Gly Thr Glu Leu Asn
 1125 1130 1135
 Phe Asp Asp Phe Ser Leu Phe Val Asn Val Val Lys Glu
 1140 1145

<210> 5704

<211> 181

<212> PRT

<213> B.fragilis

<400> 5704

Arg Gly Lys Ile Ser Pro Leu Ser Val Gly Arg Pro Arg Thr Ala Leu
 1 5 10 15
 Gly Lys Ser Phe Ala Ser Asn Phe Phe Ser Leu Ile Cys Cys Pro
 20 25 30
 Pro Pro Gln Lys Ser Ser His Met Arg Tyr Arg Ser Gly Thr Leu Cys
 35 40 45
 Arg Phe Ser Val Leu Tyr Val Ser Ala Cys Thr Gln Tyr Ile Cys Asn
 50 55 60
 Lys Lys Ala Met Asn Glu Ile Leu Asn Tyr Ile Met Val Phe Leu Phe
 65 70 75 80
 Gly Gly Gly Leu Val Gly Thr Ala Thr Ala Phe Val Thr Ile Lys Tyr
 85 90 95
 Thr Lys Lys Arg Ala Glu Ala Asp Ala Met Lys Ala Met Gln Asp Val
 100 105 110
 Tyr Gln Glu Met Ile Thr Asp Gln Arg Ser Tyr Ile Asn Ser Leu Lys
 115 120 125
 Gln Asp Lys Glu Asp Ser Glu Ala Arg Trp Glu Asn Lys Val Glu Thr
 130 135 140
 Leu Ser Lys Arg Ile Glu Thr Met Asp Leu Lys Ile Asn Glu Asn Asn
 145 150 155 160
 Arg Leu Ile Thr Glu Leu Lys Thr Met Lys Cys Thr Asp Leu Ile Cys
 165 170 175
 Gln Asn Arg Lys Gln
 180

<210> 5705

<210> 5706
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 5706
 Met Asn His Phe Ser Leu Ile Thr Glu Lys Pro Val His Lys Asn Cys
 1 5 10 15
 Thr Gly Phe Phe Lys Gly Asn Arg Ile Phe Ser Arg Leu Pro Ser Gly
 20 25 30
 Met Ala Thr His Lys Gly Tyr Thr Ala Pro Ser Ile Tyr Gln Leu Cys
 35 40 45
 Asn Ile Tyr Asn Lys Thr Glu Leu Glu Val Leu Cys Ser Ala Ser Ala
 50 55 60
 His Val Leu Thr Val Tyr Phe His Ile Tyr Leu Ile Ile Gln
 65 70 75

<210> 5707
 <211> 353
 <212> PRT
 <213> B.fragilis

<400> 5707
 Asn Leu Tyr Val Met Asn Tyr Gly Ile Ser Val Leu Phe Arg Ala Ile
 1 5 10 15
 Pro Leu Ala Met Ala Leu Phe Cys Phe Gly Tyr Gly Ala Phe Ile Ser
 20 25 30
 Ala Tyr Gly Asp Asp Ser Asn Arg Leu Val Ala Gly Pro Val Val Phe
 35 40 45
 Ser Leu Gly Met Ile Cys Ile Ala Leu Phe Ala Thr Ala Ala Thr Ile
 50 55 60
 Ile Arg Gln Ile Ile His Thr Tyr Gly Arg Gly Ser Leu Tyr Ala Leu
 65 70 75 80
 Pro Ile Ile Gly Tyr Leu Ala Ala Val Val Thr Ile Ile Gly Gly Ile
 85 90 95
 Cys Met Phe Thr Arg Ser Thr Ser Thr Ser Phe Val Ala Gly His
 100 105 110
 Val Val Ala Gly Val Gly Leu Ile Thr Thr Cys Ile Ala Thr Ala Ala
 115 120 125
 Thr Ser Ser Thr Arg Phe Ser Leu Ile Pro Ala Asn Ser Lys Met Ile
 130 135 140
 Gly Asn Gly Ile Pro Glu Gly Ala Phe Thr Lys Gly Gln Glu Arg Ile
 145 150 155 160
 Leu Lys Thr Ile Ala Ile Thr Ile Ser Leu Ile Ala Trp Ile Trp Ala
 165 170 175
 Phe Val Leu Leu Ala Lys Ser Asp Val His Pro Ala Tyr Phe Val Ala
 180 185 190
 Gly His Val Met Val Gly Leu Ala Cys Ile Cys Thr Ser Leu Ile Ala
 195 200 205
 Leu Val Ala Thr Ile Ala Arg Gln Ile Arg Asn Val Tyr Thr Asp Arg
 210 215 220
 Glu Arg Lys Arg Trp Pro Lys Leu Val Leu Leu Met Gly Thr Val Ser
 225 230 235 240
 Leu Leu Trp Gly Leu Phe Val Ile Phe Ser Asp Ser Ser Thr Thr Asn
 245 250 255
 Gly Val Ile Gly Tyr Ile Met Ile Gly Leu Gly Leu Val Cys Tyr Ser
 260 265 270
 Ile Ser Ser Lys Val Ile Leu Leu Ala Lys Ile Trp Gly Arg Glu Phe

275	280	285
Ala Leu Ala Asn Arg Ile Pro Leu Ile Pro Val Leu Thr Ala Leu Ala		
290	295	300
Cys Leu Phe Leu Ala Ser Phe Val Phe Glu Leu Gly Thr Thr His Asp		
305	310	315
Asp Tyr Phe Ile Pro Ala Arg Val Leu Ala Gly Leu Gly Ala Ile Cys		
325	330	335
Phe Thr Leu Phe Ser Ile Val Ser Ile Leu Glu Ser Gly Thr Ser Ser		
340	345	350
Lys		

<210> 5708
 <211> 1643
 <212> PRT
 <213> B.fragilis

<400> 5708

Glu Ile Pro Val Tyr Ile Pro Asn Ser Ser His Leu Asn Leu Ile Asp		
1	5	10
Met Ala Asp Gln Gln Ile Ile Asp Glu Leu Ile Asp Tyr Ile Asp		
20	25	30
Lys Ala Val Leu Lys His Ser Val Ser Asn Arg His Val Ala Glu Val		
35	40	45
Leu Tyr Trp Leu Asn Glu Gly Leu Lys Lys Val Ser Thr Asp Gly Leu		
50	55	60
Lys Asp Ile Phe Ile Ser Lys Lys Gln Ile Asp Glu Thr Asn Phe Leu		
65	70	75
Leu Arg Leu Leu Gly Gly Val Glu Phe Ser Ser Gly Asp Asp Pro Tyr		
85	90	95
Arg Ile Thr Gln Lys Gly Glu Ala Phe Leu Lys Lys Leu Thr Leu Asn		
100	105	110
Gly Gly Leu Ile Glu Tyr Asp Pro Thr Glu Arg Val Trp Lys Leu Asn		
115	120	125
Gly Asn Met Leu Ile Ser Gly Asn Ile Thr Phe Gly Trp Asp Asn Gly		
130	135	140
Thr Tyr Thr Ala Pro Thr Leu Leu Asp Leu Leu Pro Tyr Asp Pro Thr		
145	150	155
Thr Leu Ser Lys Glu Gly Gly Arg Leu Ser Val Ile Asn Ala Gly Ser		
165	170	175
Asp Phe Asp Glu Leu Ala Met Trp Gly Val Leu Ser Lys Glu Gly Val		
180	185	190
Gln Gln Ile Asp Lys Ser His Leu Ser Gly Ala Leu Ala Gly Tyr Ala		
195	200	205
Thr Glu Lys Phe Val Thr Asp Lys Gly Tyr Ile Thr Ser Ser Ala Leu		
210	215	220
Thr Gly Tyr Ala Thr Glu Thr Phe Val Arg Glu Asn Phe Val Thr Leu		
225	230	235
Ala Gly Ala Gln Glu Ile Thr Gly Glu Lys Asp Phe Thr Gly Gly Leu		
245	250	255
Lys Val Asn Gly Gly Leu Leu Asp Tyr Asp Pro Thr Glu Arg Val Trp		
260	265	270
Lys Leu Asn Gly Asn Met Leu Ile Ser Gly Asn Ile Thr Phe Gly Trp		
275	280	285
Asp Asn Gly Thr Tyr Thr Ala Pro Thr Leu Leu Asp Leu Leu Pro Tyr		
290	295	300
Asp Pro Thr Thr Leu Ser Lys Glu Gly Gly Arg Leu Ser Val Ile Gly		
305	310	315
Ser Ala Gly Ser Ser Phe Asp Glu Ser Ser Met Trp Thr Ala Leu Leu		

2450

1265 1270 1275 1280
 Asp Thr Leu Trp Ile Asn Gly Tyr Gly Gly Thr Asp Val Pro Asp Met
 1285 1290 1295
 Cys Ala Leu His Phe Ser Arg Gly Gly Ala Pro Leu Ile Tyr Ile Ser
 1300 1305 1310
 Ser Gln Lys Tyr His Ala Thr Ser Tyr Gly Thr Met Tyr His Ile Trp
 1315 1320 1325
 Thr Gly Tyr Asn Ser Asn His Ser Ser Ala Ala Trp Thr Cys Ser Thr
 1330 1335 1340
 Leu Asn Ala Asn Gly Arg Ile Ser Thr Thr Ser Asp Ile Tyr Ser Ala
 1345 1350 1355 1360
 Gly Trp Val Arg Ala Gly Gly Ser Asn Gly Phe Tyr Cys Glu Ser Tyr
 1365 1370 1375
 Gly Gly Gly Ile His Met Thr Asp Ser Thr Trp Val Arg Val Tyr Asn
 1380 1385 1390
 Gly Lys Gln Phe Tyr Val Ser Ser Thr Ser Ser Asp Ala Ile His Thr
 1395 1400 1405
 Ala Gly Gly Ile Asn Ala Ser Gly Arg Ile Tyr Ala Gly Gly His Leu
 1410 1415 1420
 Ser Thr Asn Gly Gly Leu Ala Val Ser Gly Ile Tyr Gly Gly Ser Gly
 1425 1430 1435 1440
 Ala Ser Gly Phe Asn Val Tyr Ala Val Phe Gln Gly Arg Ser Asp His
 1445 1450 1455
 Gly Gly Ile Glu Val Arg Ala Ser Asp Asn Thr Phe Gly Ile Gly Val
 1460 1465 1470
 His Ser Asn Asp His Met Tyr Trp Trp Trp Gly Thr Ser Thr Ser Thr
 1475 1480 1485
 Asn Ser Ser Ser Gly Lys Ser Tyr Ile Met Asp Tyr Gly Gly Gly Asn
 1490 1495 1500
 Trp Ser Phe Thr Gly Asn His Tyr Val Ser Gly Tyr Ser Thr Trp Gly
 1505 1510 1515 1520
 Ser Asp Ser Arg Tyr Lys Thr Tyr Leu Gly Glu Val Thr Leu Gln Leu
 1525 1530 1535
 Asp Gln Ile Ala Asp Ser Pro Thr Ile Tyr Tyr Arg Trp Asn Ser Lys
 1540 1545 1550
 Lys Arg Asp Arg Asp Gly Leu Leu His Val Gly Gly Tyr Ala Gln Tyr
 1555 1560 1565
 Thr Glu Gln Ile Leu Pro Glu Leu Thr His Asp Thr Ser Asn Phe Lys
 1570 1575 1580
 Thr Met Asp Tyr Ala Val Cys Ala Tyr Val Tyr Ala Val His Ala Ala
 1585 1590 1595 1600
 Arg Phe Leu Arg Asp His Leu Leu Ser Asp Tyr Lys Trp Lys Ser Asp
 1605 1610 1615
 Thr Glu Leu Arg Met Tyr Ala Leu Glu Lys Glu Asn Ile Lys Leu Arg
 1620 1625 1630
 Asn Arg Ile Glu Gln Leu Glu Arg Arg Ala Ala
 1635 1640

<210> 5709

<211> 130

<212> PRT

<213> B.fragilis

<400> 5709

Thr Val Lys Val Met Ala Glu Lys Thr Arg Tyr Ser Asp Ala Glu Leu
 1 5 10 15
 Glu Glu Phe Arg Ala Ile Ile Asn Glu Lys Leu Glu Leu Ala Gln Arg
 20 25 30
 Asp Tyr Glu Gln Leu Lys Leu Ser Leu Met Gly Leu Asp Gly Asn Asp

Gln Tyr Val Phe Leu Pro Ser Val Asn Asp Ser Asn Cys Arg Lys Tyr
 1 5 10 15
 Arg Lys Pro Gly Ser Leu Tyr Asn Gln Phe Phe Arg Ser Ser His Thr
 20 25 30
 Leu Lys Arg Tyr Glu Gly Leu Ile Val Phe Tyr Arg Val Cys His Phe
 35 40 45
 Val Ser Ser Leu Phe Leu Ser Tyr Leu Cys His Gln Thr Ile Lys Lys
 50 55 60
 Thr Lys Met Lys Thr Tyr Pro Val Val Leu Ser Ile Ala Gly Ser Asp
 65 70 75 80
 Cys Ser Gly Gly Ala Gly Ile Gln Ala Asp Ile Lys Thr Ile Ser Ala
 85 90 95
 Leu Gly Ala Tyr Ala Ala Ser Val Ile Thr Ala Val Thr Val Gln Asn
 100 105 110
 Thr Arg Gly Val Lys Ala Val His Thr Val Pro Ala Glu Ile Val Gln
 115 120 125
 Gly Gln Ile Glu Ala Val Met Glu Asp Leu Arg Pro Asp Ala Leu Lys
 130 135 140
 Ile Gly Met Val Ser Glu Pro Ala Leu Val Lys Ile Ile Ala Gly Cys
 145 150 155 160
 Leu Leu Lys Tyr Pro His Cys Pro Ile Val Tyr Asp Pro Val Met Val
 165 170 175
 Ser Thr Ser Gly Arg Lys Leu Met Ala Lys Asp Ala Ile Gln Leu Ile
 180 185 190
 Lys Glu Glu Leu Phe Pro Leu Thr Ser Leu Ile Thr Pro Asn Leu Asp
 195 200 205
 Glu Thr Glu Val Leu Thr Gly Lys Lys Ile Thr Thr Ala Glu Glu Met
 210 215 220
 Lys Glu Ala Ala Arg Gln Leu Ser Glu Glu Tyr His Thr Ala Val Leu
 225 230 235 240
 Val Lys Gly Gly His Leu Glu Gly Asn Glu Met Gln Asp Val Leu Phe
 245 250 255
 Thr Asp Gly Asn Ala Tyr Ile Tyr Lys Glu Lys Lys Ile Glu Ser Arg
 260 265 270
 Asn Leu His Gly Thr Gly Cys Thr Leu Ser Ser Ser Ile Ala Thr Tyr
 275 280 285
 Leu Ala Leu Gly Leu Pro Met Asp Gln Ala Val Gly Lys Ala Lys Ser
 290 295 300
 Tyr Val Ser Lys Ala Ile Asp Ala Gly Lys Glu Ile Ile Ile Gly His
 305 310 315 320
 Gly Asn Gly Pro Leu Cys His Phe Trp Gly Pro Glu Lys Ala Arg Ile
 325 330 335
 Trp Asp Asp Asn Lys Val Glu
 340

<210> 5712

<211> 68

<212> PRT

<213> B.fragilis

<400> 5712

Asn Ile Ser Phe Asn Pro Arg Leu Val Leu Thr Gly Val Met Gln Val
 1 5 10 15
 Arg Phe Val Lys Lys Leu Phe Pro Leu Lys Ile Phe Phe Arg Ile Ile
 20 25 30
 Ser Asn Asp Leu Leu Tyr Trp Leu Lys Glu Ile Gly Trp Gly Cys His
 35 40 45
 Ile Ile Gly Tyr Leu Lys Gly Val Thr Thr Asp Val Gln Phe Val Lys
 50 55 60

Pro Phe Arg Leu
65

<210> 5713

<211> 66

<212> PRT

<213> B.fragilis

<400> 5713

Ile	Leu	Thr	Ser	Lys	Lys	Met	His	Cys	Phe	Lys	Lys	Ala	Met	His	Phe
1				5					10					15	
Leu	Ser	Val	Leu	Gln	Lys	Lys	Tyr	Asn	Val	Ser	Ile	Phe	Leu	Ile	Ser
			20					25					30		
Asp	Leu	Leu	Tyr	Gln	Gln	Tyr	Lys	Lys	Ser	Asn	Tyr	Gly	Leu	Ser	Ile
		35				40						45			
Phe	Leu	Ser	Ile	Leu	Phe	Val	His	Tyr	Met	Asp	Ile	Tyr	Arg	Lys	Lys
	50					55					60				
Tyr	Thr														
65															

<210> 5714

<211> 413

<212> PRT

<213> B.fragilis

<400> 5714

Met	Asn	Asn	Ser	Pro	Gln	Pro	Ala	Ala	Lys	Gly	Phe	Thr	Arg	Ala	Phe
1				5					10					15	
Tyr	Val	Ser	Asn	Thr	Val	Glu	Leu	Phe	Glu	Arg	Met	Ala	Tyr	Tyr	Ala
			20					25					30		
Val	Phe	Ile	Val	Leu	Thr	Ile	Tyr	Leu	Ser	Thr	Ile	Leu	Gly	Phe	Asn
		35				40						45			
Asp	Phe	Glu	Ala	Ser	Met	Ile	Ser	Gly	Leu	Phe	Ser	Gly	Gly	Leu	Tyr
	50					55					60				
Leu	Leu	Pro	Ile	Phe	Thr	Gly	Ala	Tyr	Ala	Asp	Lys	Ile	Gly	Phe	Arg
65					70					75					80
Lys	Ser	Met	Leu	Val	Ala	Phe	Ser	Leu	Leu	Thr	Ala	Gly	Tyr	Phe	Gly
			85						90					95	
Leu	Gly	Val	Leu	Pro	Thr	Leu	Leu	Glu	Ser	Thr	Gly	Leu	Val	Ser	Tyr
			100					105					110		
Gly	Ala	Ser	Thr	His	Phe	Ser	Gly	Leu	Thr	Asp	Ser	Val	Phe	Arg	Trp
		115					120					125			
Leu	Ile	Val	Pro	Val	Leu	Phe	Ile	Ile	Met	Ile	Gly	Gly	Ser	Phe	Ile
	130					135					140				
Lys	Ser	Val	Ile	Ser	Ala	Ser	Val	Ala	Lys	Glu	Thr	Thr	Glu	Ala	Thr
145					150					155					160
Arg	Ala	Arg	Gly	Tyr	Ser	Ile	Phe	Tyr	Met	Met	Val	Asn	Ile	Gly	Ala
			165						170					175	
Phe	Thr	Gly	Lys	Thr	Val	Ile	Asp	Pro	Leu	Arg	Asn	Met	Ile	Gly	Asp
		180						185					190		
Gln	Ala	Tyr	Ile	Tyr	Ile	Asn	Tyr	Phe	Ser	Gly	Phe	Met	Thr	Leu	Ile
		195				200						205			
Ala	Leu	Leu	Ala	Val	Phe	Phe	Leu	Tyr	Lys	Ser	Thr	His	Thr	Val	Gly
	210					215					220				
Glu	Gly	Lys	Ser	Met	Arg	Glu	Ile	Gly	Gln	Gly	Phe	Leu	Arg	Ile	Val
225					230					235					240
Thr	Asn	Trp	Arg	Leu	Leu	Ile	Leu	Ile	Leu	Ile	Ile	Thr	Gly	Phe	Trp
			245						250					255	
Met	Val	Gln	His	Gln	Leu	Tyr	Ala	Thr	Met	Pro	Lys	Tyr	Val	Ile	Arg

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      260              265              270
Met Ala Gly Glu Thr Ala Lys Pro Gly Trp Ile Ala Asn Val Asn Pro
      275              280              285
Phe Val Val Val Cys Cys Val Ser Phe Val Thr Arg Trp Met Ala Lys
      290              295              300
Arg Ser Ala Ile Thr Ser Met Asn Ile Gly Met Phe Leu Ile Pro Val
      305              310              315              320
Ser Ala Leu Leu Met Ala Cys Gly Asn Leu Leu Asp Asn Glu Val Val
      325              330              335
Ser Gly Met Ser Asn Ile Thr Leu Met Met Ile Val Gly Ile Val Val
      340              345              350
Gln Gly Leu Ala Glu Cys Phe Ile Ser Pro Arg Tyr Leu Glu Tyr Phe
      355              360              365
Ser Leu Gln Ala Pro Lys Gly Glu Glu Gly Met Tyr Leu Gly Phe Lys
      370              375              380
Ser Ser Ser Phe Phe Phe Ile Phe His Phe Arg Ile Trp Ser Cys Arg
      385              390              395              400
Arg Ser Ala Asp Gln Val Leu Ser Gly Ser Asn Phe Val
      405              410

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<210> 5715

<211> 328

<212> PRT

<213> B.fragilis

<400> 5715

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Lys Lys Tyr Ser Ser Met Ile Ser Asp Thr Thr Ile Arg Lys Leu Val
1      5      10      15
Asp Tyr Ile Ser Leu Asn Ala Cys Ser Val Asn Ser Ser Gly Leu Tyr
      20      25      30
Asn Gly Lys Ser Gly Ile Ser Leu Ala Leu Phe Glu Thr Ala Lys Cys
      35      40      45
Leu Gln Asp Thr Glu Ile Glu Asp Lys Ala Phe Ser Leu Phe Gln Glu
      50      55      60
Ser Leu Ile Arg Lys Thr Asn Asp Tyr Gly Phe Glu Asn Gly Met Ser
      65      70      75      80
Gly Ile Gly Tyr Val Leu Ile Tyr Leu Ile Thr Asn Lys Leu Ile Asp
      85      90      95
Ala Asp Phe Glu Asp Leu Phe Gly Asp Gln Arg Glu Ala Ile Ile Lys
      100      105      110
His Phe Glu Asn Ile Asp Lys Gln Pro Asp Lys Leu Leu Val Ser Tyr
      115      120      125
Lys Ile Ile Tyr Phe Leu Phe Val Leu Asp Lys Leu Gln Lys Gln Asp
      130      135      140
Glu Arg Ile Tyr Ser Ile Ile Glu Lys Ile Phe Gln Gly Leu Glu Leu
      145      150      155      160
Tyr Leu Ser Leu Gln Phe Phe Asp Trp Lys Asn Ile Tyr Tyr Ile Asn
      165      170      175
Ser Lys Asp Tyr Val Leu Gln Met Tyr Glu Ala Tyr Leu Lys Leu Val
      180      185      190
Asp Phe Cys Asn Tyr Lys Tyr Phe Ser Lys Ser Leu Met Asp Ser Tyr
      195      200      205
Val Thr Leu Tyr Ser Glu Gly Arg Ile Ala Ser Ser Leu Val Arg Gly
      210      215      220
Tyr Tyr Leu Gly Ser Ile Ile Thr Lys Asn Asn Met Val Gly Phe Asn
      225      230      235      240
Asp Val Ile Arg Asp His Ile Arg Tyr Gly Gln Lys Asn Ile Asn Pro
      245      250      255
Ala Ile Leu Phe Leu Asp Gln Lys Ile Asn Leu Thr Gly Ile Ile Glu

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260 265 270
 Asn Ala Asp Glu Asn Arg Val Lys Ile Gln Arg Ile Glu Met Asp Leu
 275 280 285
 Phe Glu Glu Ser Leu Glu Arg Ile Lys Arg Met Val Arg Pro Asn Cys
 290 295 300
 Ile His Val Gly Tyr Gln Tyr Gly Leu Ala Arg Tyr Leu Gly Phe Cys
 305 310 315 320
 Ala Asn Lys Lys Phe Pro Leu Leu
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<400> 5716
 Met Met Ala Ser Val Ser Arg Ile Leu Ala Arg Asn Leu Phe Pro Ser
 1 5 10 15
 Pro Ser Pro Leu Leu Ala Pro Phe Thr Ser Pro Ala Ile Ser Thr Ile
 20 25 30
 Ser Thr Val Val Gly Thr Met Arg Leu Gly Cys Thr Ser Ser Ala Ser
 35 40 45
 Leu Phe Lys Arg Ser Ser Gly Thr Val Ile Thr Pro Thr Phe Gly Ser
 50 55 60
 Ile Val Gln Lys Gly Lys Phe Ala Ala Cys Ala Phe Ala Leu Asp Arg
 65 70 75 80
 Gln Leu Lys Ser Val Asp Leu Pro Thr Phe Gly Ser Pro Thr Ile Pro
 85 90 95
 His Cys Asn Ala Ile Ile Leu
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<400> 5717
 Arg Val Gly Ser Tyr Cys Gly Ser Ser His Glu Arg Arg Thr Phe Gly
 1 5 10 15
 Asn Cys Phe Leu Leu Arg Ile Ile Leu Lys Arg Ile Ile Tyr Lys Lys
 20 25 30
 Asp Leu Asp Met Met Lys Pro Ile Ala Val Asn Gln Leu Ser Asp Asn
 35 40 45
 Phe Phe Glu Thr Ile Ser Lys Glu Trp Met Leu Val Thr Ala Gly Asn
 50 55 60
 Lys Asp Ala Phe Asn Thr Met Thr Ala Asn Trp Gly Gly Ile Gly Phe
 65 70 75 80
 Leu Trp Asn Lys Pro Val Val Tyr Val Phe Ile Arg Pro Glu Arg Tyr
 85 90 95
 Thr Phe Gly Phe Met Glu Lys Asn Asp Tyr Phe Thr Leu Ser Phe Leu
 100 105 110
 Gly Glu Glu Asn Lys Ser Ile His Lys Ile Cys Gly Ser Lys Ser Gly
 115 120 125
 Arg Glu Val Asp Lys Ile Lys Glu Thr Gly Leu Lys Pro Met Ile Thr
 130 135 140
 Asp Lys Gly Asn Val Leu Phe Glu Gln Gly Arg Leu Ser Leu Glu Cys
 145 150 155 160
 Arg Lys Leu Tyr Thr Asp Val Leu Arg Lys Glu Asn Phe Leu Asp Pro
 165 170 175

Ser Val Tyr Glu Gln Trp Tyr Thr Thr His Gly Gly Leu His His Val
 180 185 190
 Tyr Val Ala Glu Ile Thr Ser Ala Trp Ile Lys Asp
 195 200

<210> 5718
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 <212> PRT
 <213> B.fragilis

<400> 5718
 Asn Ile Asn Thr Lys Lys Asn Asn Thr Trp Ser Phe Val Ile Glu Phe
 1 5 10 15
 Ile Phe Asn Ile Ile Tyr Lys Asp Tyr Gln Tyr Leu Val Ser Ser Gly
 20 25 30
 Ser Ser Ser Phe Arg Gln Thr Ile Ser Gln Pro Phe Arg Ile Pro Tyr
 35 40 45
 His Ile Thr Ile Asp Thr Pro Asp Phe Thr Thr Gly Arg Asn Asp Ser
 50 55 60

<210> 5719
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<400> 5719
 Lys Glu Trp Phe Val Pro Ile Val Tyr Met Leu Asp Ile Asn Met Asp
 1 5 10 15
 Trp Pro Val Ile Leu Ala Phe Ala Arg Ile Lys Asn Phe Leu Tyr Phe
 20 25 30
 Asn Asn Leu Ile Thr Met Cys Glu Ile Ser Val Val Met Pro Val Tyr
 35 40 45
 Asn Ala Glu Met His Ile Lys Asp Ala Ile Glu Ser Val Leu Glu Gln
 50 55 60
 Ser Phe Val Asp Phe Glu Phe Ile Leu Ile Asp Asp Gly Ser Thr Asp
 65 70 75 80
 Arg Thr Ser Ser Ile Ile Gln Ser Tyr Asn Asp Lys Arg Val Arg Leu
 85 90 95
 Ile Gln Asn Ser His Asn Phe Ile Glu Ser Leu Asn Leu Gly Ile Glu
 100 105 110
 Asn Ser Leu Gly Lys Tyr Met Ala Arg Met Asp Gly Asp Ile Met
 115 120 125
 His Ile Asp Arg Leu Lys Ile Gln Tyr Ala Ile Met Gln Glu Tyr Pro
 130 135 140
 Asp Val Thr Val Cys Gly Thr Trp Met Asn Ser Ile Gly Thr Tyr Ser
 145 150 155 160
 Gln Thr Asn Gly Leu Leu Ser Thr Leu Ser Gly Leu Val Glu Gln Pro
 165 170 175
 Leu Leu Lys Phe Thr Lys Gly Asn Phe Leu Phe His Pro Thr Thr Met
 180 185 190
 Ile Arg Met Asp Phe Leu Lys Lys Asn Ala Leu Lys Tyr Glu Asn Cys
 195 200 205
 Pro Tyr Ala Glu Asp Phe Lys Phe Trp Val Glu Ile Ala Lys Ser Gly
 210 215 220
 Gly Arg Phe Tyr Ile Asp Ser Gln Pro Leu Leu Tyr Tyr Arg Ile Ser
 225 230 235 240
 Asp Ser Gln Val Ser Ser Gln Lys Ser Ser Glu Gln Arg Ala Thr Thr
 245 250 255
 Glu Ser Ile Ile Asn Glu Val Leu Glu Tyr Leu Met Glu Leu Asn Lys

2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500

260 265 270
 Asn Glu Tyr Pro Glu Leu Ala Ala Tyr Gly Asp Leu Cys Lys Leu
 275 280 285
 Tyr Glu Lys Gln Leu Leu Thr Lys Cys Glu Val Leu Thr Leu Phe Gln
 290 295 300
 Thr Leu Phe Ser Lys Asn Glu Lys Lys Leu Asn Leu
 305 310 315

<210> 5720
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 <212> PRT
 <213> B.fragilis

<400> 5720
 Arg His Ile Thr Asp Lys Arg Asn Tyr Gln Ser Lys Ile Asn Gln Ile
 1 5 10 15
 Met Thr Lys Ser Ile Lys Gly Thr Gln Thr Glu Lys Asn Leu Leu Thr
 20 25 30
 Ser Phe Ala Gly Glu Ser Gln Ala Arg Met Arg Tyr Thr Tyr Phe Ala
 35 40 45
 Ser Val Ala Lys Lys Glu Gly Tyr Glu Gln Ile Ala Ala Ile Phe Thr
 50 55 60
 Glu Thr Ala Asp Gln Glu Lys Glu His Ala Lys Arg Met Phe Lys Phe
 65 70 75 80
 Leu Glu Gly Gly Met Val Glu Ile Thr Ala Ser Tyr Pro Ala Gly Val
 85 90 95
 Ile Gly Asn Thr Leu Gln Asn Leu Gln Ala Ala Ala Ala Gly Glu His
 100 105 110
 Glu Glu Trp Ser Leu Asp Tyr Pro His Phe Ala Asp Val Ala Glu Gln
 115 120 125
 Glu Gly Phe Pro Met Ile Ala Ala Met Tyr Arg Asn Ile Ser Ile Ala
 130 135 140
 Glu Lys Gly His Glu Glu Arg Tyr Leu Ala Phe Val Lys Asn Ile Glu
 145 150 155 160
 Val Ala Ser Val Phe Ala Lys Glu Gly Glu Val Val Trp Gln Cys Arg
 165 170 175
 Asn Cys Gly Tyr Ile Glu Val Gly Lys Glu Ala Pro Glu Val Cys Pro
 180 185 190
 Ala Cys Leu His Pro Gln Ala Tyr Phe Glu Ile Lys Lys Glu Asn Tyr
 195 200 205

<210> 5721
 <211> 682
 <212> PRT
 <213> B.fragilis

<400> 5721
 Asn Thr Ile Thr Thr Leu Asp Met Asn Glu Ser Ile Ser Ile Leu Ser
 1 5 10 15
 Ile Phe Leu Leu Val Asn Met Thr Leu Ile Thr Ser Thr Cys His Ala
 20 25 30
 Gln Asn Arg Ser Asp Tyr Pro Trp Glu Glu Val Met Glu Asn Leu Ser
 35 40 45
 Ile Ser Asp Glu Glu Gly Asp Ile Arg Asn Trp Glu Asn Glu Leu Glu
 50 55 60
 Glu Leu Thr Asp Leu Val Asn Asn Pro Val Asn Ile Asn Ser Ala Thr
 65 70 75 80
 Lys Glu Gln Leu Gln Arg Phe Pro Phe Leu Asn Asp Val Gln Ile Glu
 85 90 95

Asn Leu Leu Ala Tyr Ile Tyr Ile His Gly Ser Met Gln Thr Val Tyr
 100 105 110
 Glu Leu Gln Leu Val Glu Glu Leu Asp Arg Gln Thr Ile Gln Tyr Leu
 115 120 125
 Leu Pro Phe Val Cys Val Glu Pro Val Asp Lys Lys Glu Ser Val Thr
 130 135 140
 Leu Lys Gln Ile Leu Lys Tyr Gly Lys His Glu Ala Val Thr Arg Met
 145 150 155 160
 Asp Val Pro Leu Tyr Lys Arg Lys Gly Tyr Glu Lys Asn Tyr Leu Gly
 165 170 175
 Pro Ala Val Tyr Asn Ser Val Lys Tyr Gly Phe His Tyr Arg Glu Lys
 180 185 190
 Val Tyr Ala Gly Ile Val Ala Glu Lys Asp Ser Gly Glu Pro Phe Gly
 195 200 205
 Ala Leu His Asn Lys Gln Gly Tyr Asp Tyr Tyr Ser Phe Tyr Leu Leu
 210 215 220
 Leu His Asp Ile Gly Ile Leu Lys Thr Gly Ile Val Gly Asn Tyr Arg
 225 230 235 240
 Leu Asn Phe Gly Gln Gly Leu Val Leu Gly Gln Gly Ser Met Phe Gly
 245 250 255
 Lys Thr Ala Tyr Ser Ser Ser Phe Thr Phe Arg Ser Thr Gly Ile Arg
 260 265 270
 Arg His Thr Ser Thr Asp Glu Tyr Asn Tyr Phe Arg Gly Ser Gly Ile
 275 280 285
 Ala Leu Lys Trp Lys Gln Trp Thr Leu Ser Val Phe Tyr Ser His Arg
 290 295 300
 Ser Leu Asp Gly Val Ile Lys Gly Gly Glu Ile Thr Ser Ile Tyr Lys
 305 310 315 320
 Thr Gly Leu His Arg Ser Glu Lys Glu Ala Asp Lys Met Asn Gln Leu
 325 330 335
 Thr Met Gln Met Ser Gly Gly Asn Ile Ser Tyr Thr Gly Asn Ser Tyr
 340 345 350
 Gln Leu Gly Ile Thr Gly Val Tyr Tyr Cys Phe Asn Arg Ser Tyr Glu
 355 360 365
 Pro Glu Leu Lys Asp Tyr Ser Lys Tyr Asn Leu His Gly Arg Ser Phe
 370 375 380
 Tyr Asn Leu Gly Met Asp Tyr Lys Tyr Arg Phe His Arg Phe Ser Ile
 385 390 395 400
 Gln Gly Glu Ala Ala Leu Gly Ile Ser Gly Met Ala Phe Met Asn Gln
 405 410 415
 Val Leu Tyr Ser Pro Leu Gln Asp Ile Arg Leu Met Leu Val His Arg
 420 425 430
 Tyr Tyr Ser His Asp Tyr Trp Ala Met Phe Ala His Ser Phe Ser Glu
 435 440 445
 Gly Ser Ser Val Gln Asn Glu Asn Gly Trp Tyr Leu Ala Ala Ser Val
 450 455 460
 Asn Pro Phe Asn Arg Trp Thr Phe Phe Val Ser Ala Asp Leu Phe Ser
 465 470 475 480
 Phe Pro Trp Trp Arg Tyr Arg Ile Ser Lys Ala Ser Lys Gly Val Asp
 485 490 495
 Leu Leu Phe Gln Ala Asn Tyr Val Pro Ser Lys Thr Val Asp Met Tyr
 500 505 510
 Val Asn Tyr Arg Tyr Lys Gln Lys Glu Arg Asp Val Thr Gly Thr Gln
 515 520 525
 Gly Lys Val Ile Leu Pro Thr Tyr His His Arg Leu Arg Tyr Arg Leu
 530 535 540
 Asn Tyr Leu Arg Cys Ser Ser Leu Phe Leu Arg Thr Thr Val Asp Tyr
 545 550 555 560
 Asn His Phe His Ser Ser Gly Lys Thr Ala Gly Gln Gly Tyr Gln Leu

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<210> 5722
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<212> PRT
<213> B.fragilis
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<210> 5723
<211> 119
<212> PRT
<213> B.fragilis
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<400> 5723															
Leu	Trp	Arg	Thr	Val	Glu	Asn	Lys	Ser	Thr	Met	Asp	Asp	Ile	Val	Lys
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Val	Leu	Val	Ile	Met	Ala	Ala	Phe	Ala	Leu	Pro	Leu	Ile	Arg	Gln	Ile
			20					25					30		
Lys	Lys	Ser	Lys	Thr	Glu	Arg	Ser	Ala	Gln	Lys	Pro	Phe	Val	Pro	Ile
		35					40					45			
Pro	Asp	Thr	Glu	Glu	Pro	Glu	Val	Leu	Lys	Val	Thr	Arg	Lys	Tyr	Gln
	50					55					60				
Pro	Leu	His	Ser	Gln	Ser	Thr	Ser	Gln	Lys	Val	Glu	Val	Lys	Lys	Asn
65					70					75					80

Lys Thr Val Ser Gln Lys Ile Glu Thr Thr Pro Ala Asn Asp Pro Glu
 85 90 95
 Phe Thr Ile His Ser Ala Glu Glu Ala Arg Lys Ala Ile Ile Trp Ser
 100 105 110
 Glu Ile Leu Asn Arg Lys Tyr
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<210> 5724
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 5724
 Val Asn Ala Ala Arg Lys Thr Ile Asn Ile Asn Leu Ile Leu Tyr Phe
 1 5 10 15
 Cys Lys Met Asn Met Arg Leu Thr Ile Gly Leu Leu Met Leu Ser Ile
 20 25 30
 Ala Leu Leu Phe Ser Ser Glu Ser Leu Ala Gln Glu Lys Thr Asn Leu
 35 40 45
 Gly Gly Tyr Leu Val Pro Met Cys Val Tyr Asn Gly Asp Thr Ile Pro
 50 55 60
 Ala Phe Gln Ile Pro Thr Ile His Ile Phe Lys Pro Leu Lys Phe Arg
 65 70 75 80
 Asn Arg Lys Glu Gln Met Glu Tyr Tyr Lys Leu Val Arg Asn Val Lys
 85 90 95
 Lys Val Tyr Pro Ile Ala Arg Glu Ile Asn Arg Thr Ile Ile Glu Thr
 100 105 110
 Tyr Glu Tyr Leu Gln Thr Leu Pro Asn Glu Lys Ala Arg Gln Arg His
 115 120 125
 Ile Lys Arg Val Glu Lys Gly Leu Lys Glu Gln Tyr Thr Pro Arg Met
 130 135 140
 Lys Lys Leu Ser Phe Ala Gln Gly Lys Leu Leu Ile Lys Leu Ile Asp
 145 150 155 160
 Arg Gln Ser His Gln Ser Ser Tyr Glu Leu Val Lys Ala Phe Met Gly
 165 170 175
 Pro Phe Lys Ala Gly Phe Tyr Gln Thr Phe Ala Ala Leu Phe Gly Ala
 180 185 190
 Ser Leu Lys Lys Gln Tyr Asp Pro Glu Gly Glu Asp Lys Leu Thr Glu
 195 200 205
 Arg Val Ile Leu Leu Val Glu Ser Gly Gln Leu
 210 215

<210> 5725
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 <212> PRT
 <213> B.fragilis

<400> 5725
 His Cys Tyr Leu Ile Pro Thr His Lys Met Ile Ser Lys Pro Thr Lys
 1 5 10 15
 Ser Asp Val Met Arg Glu Leu Arg Asp Tyr Ile Phe Ile Thr Leu Gly
 20 25 30
 Leu Ile Ser Tyr Ala Leu Gly Trp Thr Ala Phe Leu Ile Pro Tyr Gln
 35 40 45
 Ile Thr Thr Gly Gly Thr Thr Gly Ile Gly Ala Ile Ile Tyr Tyr Ala
 50 55 60
 Thr Gly Phe Pro Ile Gln Trp Ser Tyr Phe Ile Ile Asn Ala Val Leu
 65 70 75 80
 Met Thr Phe Ala Ile Lys Ile Leu Gly Pro Lys Phe Ser Ile Lys Thr

85 90 95
 Thr Tyr Ala Ile Phe Met Leu Thr Phe Phe Leu Trp Phe Phe Gln Leu
 100 105 110
 Ile Ile Val Asp Asp Lys Gly Ala Pro Leu Gln Leu Val Gly Glu Gly
 115 120 125
 Gln Asp Phe Met Ala Cys Ile Ile Gly Ala Ile Met Cys Gly Leu Gly
 130 135 140
 Leu Gly Val Val Phe Asn Asn Asn Gly Ser Thr Gly Gly Thr Asp Ile
 145 150 155 160
 Ile Ala Ala Ile Val Asn Lys Tyr Lys Asp Val Thr Leu Gly Arg Met
 165 170 175
 Ile Met Phe Cys Asp Ile Ile Ile Ile Ser Ser Cys Tyr Phe Ile Phe
 180 185 190
 Asn Asp Trp Arg Arg Val Ile Phe Gly Phe Val Thr Leu Phe Ile Ile
 195 200 205
 Gly Phe Val Leu Asp Tyr Val Val Asn Ser Ala Arg Gln Ser Val Gln
 210 215 220
 Phe Phe Ile Phe Ser Lys Asp Tyr Ala Lys Ile Ala Asp Arg Ile Thr
 225 230 235 240
 Lys Glu Thr His Arg Gly Val Thr Val Leu Asp Gly Leu Gly Trp Tyr
 245 250 255
 Ser Gln Asn Asn Val Lys Val Leu Val Leu Ala Tyr Lys Arg Gln
 260 265 270
 Ser Leu Asp Ile Phe Arg Leu Val Lys Asp Ile Asp Pro Asn Ala Phe
 275 280 285
 Ile Ser Gln Ser Ser Val Ile Gly Val Tyr Gly Glu Gly Phe Asp Arg
 290 295 300
 Leu Lys Ile Lys
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<210> 5726
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 5726
 Glu Leu Ile Ala Leu Ser Ile Phe Asp Cys Gln Glu Lys Leu Val Phe
 1 5 10 15
 Ala Thr Gln Ser Tyr Asp Arg Ala Asp Ser Arg Met Glu Gly Ala Thr
 20 25 30
 Glu Gln Asp Cys Ala Lys Lys Arg Thr Asp Ala Asn Asn Ile Lys Tyr
 35 40 45
 Phe Ile Thr Gly Val Phe Ile Asn Phe Leu Ser Ala Ser Val Ser Pro
 50 55 60
 Leu Phe Phe Pro Val Phe Val Leu Phe Ser Leu
 65 70 75

<210> 5727
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 5727
 Phe Ile Asn Leu Leu Thr Phe Arg Gln Lys Ser Asp Lys Met Asn Arg
 1 5 10 15
 Ile Phe His Ala Arg Ile Val Trp Tyr Gln Tyr Phe Leu Leu Val Val
 20 25 30
 Leu Gly Val Asn Ala Phe Gly Phe Leu Trp Cys Lys Asn Ile Ile Leu
 35 40 45

Ala Thr Leu Met Met Leu Phe Leu Ile Val Val Ile Glu Gln Ile Ile
 50 55 60
 His Thr Val Tyr Thr Val Thr Ala Asp Gly Leu Leu Leu Asn His
 65 70 75 80
 Gly Arg Phe Ile Arg Lys Lys Thr Ile Pro Ile Ala Glu Ile Thr Ser
 85 90 95
 Ile Arg Lys Val His Ser Met Lys Phe Gly Ser Phe Ser Val Thr Asn
 100 105 110
 Tyr Leu Leu Ile Glu Tyr Gly Lys Gly Lys Tyr Ala Ser Val Leu Pro
 115 120 125
 Val Lys Glu Lys Glu Phe Met Glu Leu Ile Glu Lys Thr Arg Asn Leu
 130 135 140
 Ile
 145

<210> 5728
 <211> 211
 <212> PRT
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<400> 5728
 Phe Ser Lys Tyr Met Leu Ile Leu Leu Thr Gly Phe Lys Pro Leu Ser
 1 5 10 15
 Thr Pro Met Leu Thr Arg Lys Glu Leu Leu Leu Gln His Thr Asn Arg
 20 25 30
 Asn Asp Ile Ile Met Arg Lys Leu Lys Ile Thr Glu Leu Asn Arg Ile
 35 40 45
 Ser Ile Glu Glu Phe Lys Glu Ala Asp Lys Leu Pro Leu Val Val Val
 50 55 60
 Leu Asp Asp Ile Arg Ser Leu His Asn Ile Gly Ser Val Phe Arg Thr
 65 70 75 80
 Ala Asp Ala Phe Arg Ile Glu Cys Ile Tyr Leu Cys Gly Ile Thr Ala
 85 90 95
 Thr Pro Pro His Pro Glu Met His Lys Thr Ala Leu Gly Ala Glu Phe
 100 105 110
 Thr Val Asp Trp Lys Tyr Val Asn Asn Ala Val Glu Thr Val Asp Asn
 115 120 125
 Leu Arg Ser Glu Gly Tyr Val Val Tyr Ser Val Glu Gln Ala Glu Gly
 130 135 140
 Ser Ile Met Leu Asp Glu Leu Thr Leu Asp Arg Ser Lys Lys Tyr Ala
 145 150 155 160
 Val Val Met Gly Asn Glu Val Lys Gly Val Gln Gln Glu Val Ile Asp
 165 170 175
 His Ser Asp Gly Cys Ile Glu Ile Pro Gln Tyr Gly Thr Lys His Ser
 180 185 190
 Leu Asn Val Ser Val Thr Ala Gly Ile Val Ile Trp Asp Leu Phe Lys
 195 200 205
 Lys Leu Lys
 210

<210> 5729
 <211> 448
 <212> PRT
 <213> B.fragilis

<400> 5729
 Thr Met Lys Tyr Gln Val Ile Ile Ile Gly Gly Gly Pro Ala Gly Tyr
 1 5 10 15
 Thr Ala Ala Glu Ala Ala Gly Lys Ala Gly Leu Ser Val Leu Leu Phe

20					25					30					
Glu	Lys	Gln	Asn	Leu	Gly	Gly	Val	Cys	Leu	Asn	Glu	Gly	Cys	Ile	Pro
35					40					45					
Thr	Lys	Thr	Leu	Leu	Tyr	Ser	Ala	Lys	Thr	Tyr	Asp	Gly	Ala	Lys	His
50					55					60					
Ala	Ser	Lys	Tyr	Ala	Val	Thr	Val	Pro	Glu	Val	Phe	Phe	Asp	Leu	Pro
65					70					75					
Lys	Ile	Ile	Ala	Arg	Lys	Ser	Lys	Val	Val	Arg	Lys	Leu	Val	Leu	Gly
85					90					95					
Val	Lys	Ser	Lys	Leu	Thr	Ser	Asn	Asn	Val	Thr	Ile	Ile	Ser	Gly	Glu
100					105					110					
Ala	Thr	Ile	Leu	Asp	Lys	Asn	Thr	Val	Arg	Cys	Gly	Glu	Glu	Thr	Tyr
115					120					125					
Glu	Cys	Asp	Asn	Leu	Ile	Leu	Cys	Thr	Gly	Ser	Glu	Thr	Phe	Ile	Pro
130					135					140					
Pro	Ile	Ser	Gly	Ile	Asp	Ser	Val	Asn	Tyr	Trp	Thr	His	Arg	Glu	Ala
145					150					155					
Leu	Asp	Asn	Lys	Glu	Leu	Pro	Ala	Ser	Leu	Ala	Ile	Val	Gly	Gly	Gly
165					170					175					
Val	Ile	Gly	Met	Glu	Phe	Ala	Ser	Phe	Phe	Asn	Ser	Leu	Gly	Val	Lys
180					185					190					
Val	Thr	Val	Ile	Glu	Met	Met	Asp	Glu	Ile	Leu	Gly	Gly	Met	Asp	Lys
195					200					205					
Glu	Leu	Ser	Ala	Leu	Leu	Arg	Ala	Asp	Tyr	Ala	Lys	Arg	Gly	Ile	Gln
210					215					220					
Phe	Leu	Leu	Ser	Thr	Lys	Val	Val	Ser	Leu	Ala	Gln	Thr	Glu	Glu	Gly
225					230					235					
Ala	Val	Val	Ser	Tyr	Glu	Asn	Ala	Glu	Gly	Ala	Gly	Ser	Val	Ile	Ala
245					250					255					
Glu	Lys	Leu	Leu	Met	Ser	Val	Gly	Arg	Arg	Pro	Val	Thr	Lys	Gly	Phe
260					265					270					
Gly	Leu	Glu	Asn	Leu	Asn	Leu	Gln	Arg	Thr	Glu	Arg	Gly	Ser	Ile	Val
275					280					285					
Val	Asn	Gly	Gln	Met	Glu	Ser	Ser	Leu	Pro	Gly	Val	Tyr	Val	Cys	Gly
290					295					300					
Asp	Leu	Thr	Gly	Phe	Ser	Leu	Leu	Ala	His	Thr	Ala	Val	Arg	Glu	Ala
305					310					315					
Glu	Val	Ala	Val	His	Ala	Ile	Leu	Gly	Lys	Glu	Asp	Arg	Met	Ser	Tyr
325					330					335					
Ala	Ala	Ile	Pro	Gly	Val	Val	Tyr	Thr	Asn	Pro	Glu	Ile	Ala	Gly	Val
340					345					350					
Gly	Gln	Thr	Glu	Glu	Ser	Leu	Thr	Ala	Lys	Gly	Ile	Ala	Tyr	Arg	Ala
355					360					365					
Val	Lys	Leu	Pro	Met	Ala	Tyr	Ser	Gly	Arg	Phe	Val	Ala	Glu	Asn	Glu
370					375					380					
Gly	Val	Asn	Gly	Val	Cys	Lys	Val	Leu	Leu	Gly	Glu	Asp	Asp	Thr	Ile
385					390					395					
Leu	Gly	Ala	His	Val	Leu	Gly	Asn	Pro	Ala	Ser	Glu	Ile	Ile	Thr	Leu
405					410					415					
Ala	Gly	Met	Ala	Val	Glu	Met	Lys	Leu	Lys	Ala	Ala	Glu	Trp	Lys	Lys
420					425					430					
Ile	Val	Phe	Pro	His	Pro	Thr	Val	Ala	Glu	Ile	Phe	Arg	Glu	Ala	Leu
435					440					445					

<210> 5730

<211> 83

<212> PRT

<213> B.fragilis

<400> 5730

Gly Gln Gly Tyr Phe Gln Gln Asp Glu Pro Ala Phe Ser Val Phe Asp
 1 5 10 15
 Pro Val Leu Asp Tyr Phe Asn Thr His Val Ile His Arg Ser Gly Ala
 20 25 30
 Met His Ala Leu Pro Asp Gly Glu Tyr Pro Phe Thr Gly Lys Gly Gln
 35 40 45
 Gly Leu Lys Ile Ala Ala Val Ser Gly His His Ile Arg Phe Pro Asp
 50 55 60
 Gly Ser Arg Arg Ala Val Ile Gln Gly Trp Glu Phe Asn Arg Ile Phe
 65 70 75 80
 Ser Ile Asn

<210> 5731

<211> 82

<212> PRT

<213> B.fragilis

<400> 5731

Tyr Tyr Ser Leu Phe Tyr Ile Ile Asn Gln Leu Cys Ile Ser Ile Lys
 1 5 10 15
 Trp Lys Ser Asn Pro Val Lys Leu Lys Lys Ser Asn Tyr Ser Asp Asn
 20 25 30
 Ile Pro Phe Trp Gly Ala Lys Ile Ile Asn Phe Arg Leu Met Gln Ser
 35 40 45
 Ser Ala Phe Ser Phe Cys Pro Lys Arg Gly Cys Leu Leu Leu Pro Gly
 50 55 60
 Ser Gln Thr Met Arg Glu Asn Leu Cys His Ser Ala Val Leu Lys Glu
 65 70 75 80
 Ile Ser

<210> 5732

<211> 318

<212> PRT

<213> B.fragilis

<400> 5732

Gln Ala Thr His Lys Ile Ser Ile Asn Met Glu Ser Thr Asn Arg Leu
 1 5 10 15
 Arg Tyr Leu Ile Ala Gly Thr Gly Gly Val Gly Gly Ser Ile Ala Gly
 20 25 30
 Phe Leu Ser Leu Ala Gly Lys Asp Ile Thr Cys Ile Ala Arg Gly Ala
 35 40 45
 His Leu Gln Ala Ile Gln Gln Asp Gly Leu Lys Leu Lys Ser Asp Leu
 50 55 60
 Lys Gly Glu His Ala Leu Arg Ile Asn Ala Cys Thr Ala Glu Glu Tyr
 65 70 75 80
 Asn Gly Lys Ala Asp Val Ile Phe Val Cys Val Lys Gly Tyr Ser Val
 85 90 95
 Asp Ser Ile Thr Glu Leu Ile Lys Arg Ala Ala His Asp Arg Thr Ile
 100 105 110
 Val Ile Pro Ile Leu Asn Val Tyr Gly Thr Gly Pro Arg Ile Gln Arg
 115 120 125
 Leu Val Pro Gly Val Thr Val Leu Asp Gly Cys Ile Tyr Ile Val Gly
 130 135 140
 Phe Val Ser Gly Pro Gly Glu Ile Thr Gln Met Gly Thr Ile Phe Arg
 145 150 155 160

Leu Val Tyr Gly Ala His Arg Gly Ile Leu Val Pro Ala Gly Leu Met
 165 170 175
 Glu Ala Val Gln Arg Asp Leu Gln Glu Ser Gly Ile Lys Val Glu Ile
 180 185 190
 Ser Pro Asp Ile Asn Arg Asp Thr Phe Ile Lys Trp Ser Phe Ile Ser
 195 200 205
 Ala Met Ala Val Thr Gly Ala Tyr Phe Asp Val Pro Met Gly Glu Val
 210 215 220
 Gln Lys Pro Gly Lys Val Arg Asp Thr Phe Ile Gly Leu Ser Thr Glu
 225 230 235 240
 Ser Ala Ala Leu Gly Lys Lys Leu Gly Ile Glu Phe Lys Glu Asp Ile
 245 250 255
 Val Thr Tyr Asn Leu Lys Val Ile Asp Lys Leu Ala Pro Glu Ser Thr
 260 265 270
 Ala Ser Met Gln Lys Asp Ile Ala Arg Gly His Glu Ser Glu Val Gln
 275 280 285
 Gly Leu Leu Phe Asp Met Ile Thr Ala Ala Glu Glu Gln Gly Ile Asp
 290 295 300
 Val Pro Thr Tyr Arg Glu Val Ala Lys Lys Phe Ile Lys Gln
 305 310 315

<210> 5733
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 5733
 Asn Lys Leu His Thr Met Lys Arg Lys Leu Val Phe Ala Thr Asn Asn
 1 5 10 15
 Ala His Lys Leu Glu Glu Val Ser Ala Ile Leu Gly Asp Lys Val Glu
 20 25 30
 Leu Leu Ser Leu Asn Asp Ile Asn Cys His Thr Asp Ile Pro Glu Thr
 35 40 45
 Ala Glu Thr Leu Glu Gly Asn Ala Tyr Leu Lys Ser Ser Phe Ile Tyr
 50 55 60
 Arg Asn Tyr Gly Leu Asn Cys Phe Ala Asp Asp Thr Gly Leu Glu Val
 65 70 75 80
 Glu Ser Leu Gly Gly Ala Pro Gly Ile Tyr Ser Ala Arg Tyr Ala Gly
 85 90 95
 Gly Glu Gly His Asn Ala Glu Ala Asn Met Leu Lys Leu Leu His Glu
 100 105 110
 Leu Glu Gly Lys Asp Asn Arg Arg Ala Gln Phe Arg Thr Ala Ile Ser
 115 120 125
 Leu Ile Leu Asp Glu Lys Glu Tyr Leu Phe Glu Gly Ile Ile Lys Gly
 130 135 140
 Glu Ile Ile Lys Glu Lys Arg Gly Asp Ser Gly Phe Gly Tyr Asp Pro
 145 150 155 160
 Val Phe Val Pro Glu Gly Tyr Asp Arg Thr Phe Ala Glu Leu Gly Asn
 165 170 175
 Glu Ile Lys Asn Gln Ile Ser His Arg Ala Leu Ala Val Asn Lys Leu
 180 185 190
 Cys Glu Phe Leu Arg Ser Ile
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<210> 5734
 <211> 493
 <212> PRT
 <213> B.fragilis

<400> 5734

Arg Tyr Ser Lys Thr Leu Lys Thr Leu Leu Tyr Ile Leu Val Phe Ser
 1 5 10 15
 Leu Cys Tyr Thr Asn Ala Tyr Cys Gln Ser Ile Pro Arg Glu Val Thr
 20 25 30
 Leu Asp Glu Val Ile Asn Arg Leu Ser Leu Glu Ser Ser Ala Lys
 35 40 45
 Ile Glu Leu Leu Asn Phe Gln Asn Asp Leu Leu Arg Tyr Glu Asn Tyr
 50 55 60
 Lys Lys Ser Phe Leu Pro Ala Phe Val Leu Asn Phe Asn Pro Ile Asn
 65 70 75 80
 Phe Asn Arg Ser Leu Arg Leu Leu Gln Gln Pro Ile Asp Gly Ser Tyr
 85 90 95
 Ser Tyr Val Glu Asp Asn Ser Asn Thr Asn Phe Gly Thr Thr Val
 100 105 110
 Arg Gln Lys Ile Ser Ile Thr Gly Gly Glu Leu Ser Ile Gly Ser Asn
 115 120 125
 Ile Asn Tyr Leu Asn Glu Phe Ser Arg Lys Gln Asn Ser Phe Ser Thr
 130 135 140
 Asn Pro Phe Phe Ile Ser Tyr Ser Gln Gln Leu Trp Gly Gly Gly Lys
 145 150 155 160
 Leu Gln Arg Leu Glu Asn Lys Ile Glu Arg Ala Lys Asn Glu Val Ala
 165 170 175
 Val Lys Gln Tyr Cys Ser Asn Ile Ala Gln Ile Gln Gln Gln Ala Leu
 180 185 190
 Thr Leu Tyr Leu Ser Ala Ile Leu Ser Lys Met Asp Ser Glu Leu Ala
 195 200 205
 Ile Asp Ile Lys Gln Ser Asn Asp Thr Leu Leu His Ile Ala Glu Ile
 210 215 220
 Lys Leu Arg Asn Gly Ser Ile Thr Glu Tyr Asp Tyr Lys Gln Met Glu
 225 230 235 240
 Leu Gln Ser Leu Asn Leu Gln Tyr Met Tyr Glu Asn Ala Val Lys His
 245 250 255
 Tyr Ala Glu Ser Ile Gln Lys Leu Phe Thr Phe Leu Gly Ile Glu Asn
 260 265 270
 Asn Ala Glu Ile Thr Ile Pro Asp Phe Asp Leu Pro Leu Thr Ile Asp
 275 280 285
 Ala Arg Leu Val Ile Tyr Tyr Val Lys Lys Asn Asn Pro Ile Ser Asn
 290 295 300
 Gln Gln Glu Ile Gln Gln Leu Glu Glu Glu Lys Asn Leu Phe Ser Ile
 305 310 315 320
 Lys Leu Lys Asn Arg Phe Asn Gly Asn Ile Ser Leu Asn Tyr Gly Ile
 325 330 335
 Asn Gln Tyr Ala Glu Thr Leu Ala Asp Ala Tyr Arg His Gly Asn Thr
 340 345 350
 Arg Gln Ser Val Ile Ile Glu Phe Gln Ile Pro Ile Phe Gln Trp Gly
 355 360 365
 Ile Asn Lys Asn Asn Ile Arg Ile Ala Lys Asn Asn Tyr Asp Ala Ser
 370 375 380
 Arg Leu Arg Ile Glu Lys Lys Met Phe Glu Phe Glu Asn Glu Val Lys
 385 390 395 400
 Glu Lys Ile Asn Ala Tyr Asp His Ser Val Lys Leu Trp Leu Thr Ala
 405 410 415
 Ser Arg Ala Tyr Ala Leu Ser Lys Glu Gln Tyr Lys Met Leu Thr Lys
 420 425 430
 Lys Phe Ser Leu Gly Lys Val Ser Val Tyr Glu Leu Ala Thr Ala Gln
 435 440 445
 Lys Glu Arg Asn Asp Ala Met Gln Arg Tyr Tyr Ser Ala Ile Lys Asp
 450 455 460

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Ser Tyr Glu Ser Phe Phe Thr Leu Arg Asn Leu Ala Leu Tyr Asp Phe
 465 470 475 480
 Lys Lys Asn Val Glu Leu Glu Lys Ile Leu Phe Asn Asp
 485 490

<210> 5735
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5735
 Phe Ile Tyr Lys Pro Leu Ile Ile Thr Ala Met Lys Lys Leu Thr Lys
 1 5 10 15
 Lys Asn Leu Ser Glu Leu Ala Lys Thr Met Pro Val Ile Glu Glu Ser
 20 25 30
 Leu Gln Met Ser Tyr Val Gly Gly Gly Asn Gly Thr Ser Ala Asn Pro
 35 40 45
 Tyr Thr Lys Val Glu Phe Asp Ser Met Leu Ser Asn Asp Asn Trp Asn
 50 55 60
 Gly Gly Tyr Val Glu Gly Met Gly Tyr Val Ala Pro Asn Thr Tyr Ile
 65 70 75 80
 Tyr Gly Asn Ser Val Tyr Trp Gly Ser Val Ser Gln Asp Tyr Tyr Thr
 85 90 95
 Phe Pro Asp Tyr Val Thr Ser Leu Ser Ser Asp Gly Leu Asn Gln Met
 100 105 110
 Ala Glu Ser Leu Ala Gly Ala Ile Pro Gly Val Gly Ser Tyr Thr Ala
 115 120 125
 Tyr Leu Ser Gln Glu Leu Gly Asp Met Ser Arg Glu Ile Gln Ser Glu
 130 135 140
 Leu Leu Lys Lys Gly Tyr Asn Gly Ser Ser Ser Phe Thr Ile Val Arg
 145 150 155 160
 Thr Tyr Met Gly Ser Ser Val Lys Phe Ser Val Tyr Asn Ala Asn Asn
 165 170 175
 Gly Glu Leu Ile Thr Ser Lys Thr Ile Asn Met Phe Gly Phe Trp Gln
 180 185 190

<210> 5736
 <211> 506
 <212> PRT
 <213> B.fragilis

<400> 5736
 His Glu Asn Asn Thr Ile Ile Met Ala Phe Lys Ser Ile Ser Ala Ala
 1 5 10 15
 Glu Ala Ala Ser Leu Val Lys His Gly Tyr Asn Ile Gly Leu Ser Gly
 20 25 30
 Phe Thr Pro Ala Gly Thr Ala Lys Ala Val Thr Ser Glu Ile Ala Lys
 35 40 45
 Ile Ala Glu Ala Glu His Ala Lys Gly Asn Pro Phe Gln Ile Gly Ile
 50 55 60
 Phe Thr Gly Ala Ser Thr Gly Asp Ser Cys Asp Gly Ile Leu Ser Arg
 65 70 75 80
 Val Lys Ala Ile Arg Tyr Arg Ala Pro Tyr Thr Thr Asn Pro Asp Phe
 85 90 95
 Arg Lys Ala Val Asn Asn Gly Glu Ile Ala Tyr Asn Asp Ile His Leu
 100 105 110
 Ser Gln Met Ala Gln Glu Val Arg Tyr Gly Phe Met Gly Lys Val Asn
 115 120 125
 Val Ala Ile Ile Glu Ala Cys Glu Val Thr Pro Asp Gly Lys Ile Tyr

130 135 140
 Leu Thr Ala Ala Gly Gly Ile Ala Pro Thr Val Cys Arg Leu Ala Asp
 145 150 155 160
 Gln Ile Ile Val Glu Leu Asn Ser Ala His Ser Lys Asn Met Met Gly
 165 170 175
 Met His Asp Val Tyr Glu Pro Leu Asp Pro Pro Tyr Arg Arg Glu Ile
 180 185 190
 Pro Ile Tyr Lys Pro Ser Asp Arg Ile Gly Leu Pro Tyr Ile Gln Val
 195 200 205
 Asp Pro Lys Lys Ile Val Gly Ile Val Glu Thr Asn Trp Pro Asp Glu
 210 215 220
 Ala Arg Ser Phe Ala Ala Ala Asp Pro Ile Thr Asp Lys Ile Gly Gln
 225 230 235 240
 Asn Val Ala Asp Phe Leu Ala Ala Asp Met Lys Arg Gly Ile Ile Pro
 245 250 255
 Ser Thr Phe Leu Pro Leu Gln Ser Gly Val Gly Asn Ile Ala Asn Ala
 260 265 270
 Val Leu Gly Ala Leu Gly Arg Asp Gln Thr Ile Pro Ala Phe Glu Met
 275 280 285
 Tyr Thr Glu Val Ile Gln Asn Ser Val Ile Gly Leu Ile Arg Glu Gly
 290 295 300
 Arg Val Lys Phe Gly Ser Ala Cys Ser Leu Thr Val Thr Asn Asp Cys
 305 310 315 320
 Leu Gln Gly Ile Tyr Asp Asp Met Asp Phe Phe Arg Asp Lys Leu Ile
 325 330 335
 Leu Arg Pro Ser Glu Ile Ser Asn Ser Pro Glu Val Val Arg Arg Leu
 340 345 350
 Gly Ile Ile Ser Ile Asn Thr Ala Ile Glu Ala Asp Ile Tyr Gly Asn
 355 360 365
 Val Asn Ser Thr His Ile Gly Gly Thr Lys Met Met Asn Gly Ile Gly
 370 375 380
 Gly Ser Gly Asp Phe Thr Arg Asn Ala Tyr Ile Ser Ile Phe Thr Cys
 385 390 395 400
 Pro Ser Val Ala Lys Glu Gly Lys Ile Ser Ser Ile Val Pro Met Val
 405 410 415
 Ser His Leu Asp His Ser Glu His Ser Val Asn Ile Val Ile Thr Glu
 420 425 430
 Gln Gly Val Ala Asp Leu Arg Gly Lys Ser Pro Lys Glu Arg Ala Gln
 435 440 445
 Ala Ile Ile Glu Asn Cys Ala His Pro Asp Tyr Lys Gln Ile Leu Trp
 450 455 460
 Asp Tyr Leu Lys Leu Ala Gly Asn Lys Ser Gln Thr Pro His Ala Ile
 465 470 475 480
 Gln Ala Ala Leu Gly Met His Ala Glu Leu Ala Lys Ser Gly Asp Met
 485 490 495
 Lys Asn Val Asn Trp Ala Glu Tyr Glu Arg
 500 505

<210> 5737
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 5737
 Ser Cys Tyr Asn Glu Val Leu Tyr Lys Ser Ile Arg Lys Thr Asn Ser
 1 5 10 15
 Lys Lys Asn Arg Ser Gln Tyr Met Asn Ile Ala Phe Leu Thr Thr Leu
 20 25 30
 Asn Pro Ala Asp Ile Asn Asn Trp Ser Gly Thr Thr Phe His Leu Phe

35 40 45
 His Ala Leu Ser Arg Lys His His Val Lys Val Ile Gly Gln Asn Thr
 50 55 60
 Leu Pro Gln Ala Ala Tyr Phe Thr Lys Asp Asn Cys Ile Lys Lys Asn
 65 70 75 80
 Pro Leu Glu Asn Tyr Val Ser Val Phe Gly Lys Leu Cys Thr Glu Gln
 85 90 95
 Leu Thr Asn Tyr Asp Leu Val Phe Phe Gly Asp Leu Tyr Leu Ala Pro
 100 105 110
 Phe Leu Asp Val Asn Val Pro Val Val His Leu Ser Asp Val Thr Tyr
 115 120 125
 His Ser Phe Gln Ser Tyr Leu Asn Pro Leu Lys Asn Glu Glu Arg Tyr
 130 135 140
 Arg Lys Leu Glu
 145

<210> 5738

<211> 457

<212> PRT

<213> B.fragilis

<400> 5738

Arg Thr Gly Lys Lys Met Asn Ser Arg Ile Gln Lys Gln Glu Gln Pro
 1 5 10 15
 Ile Cys Ser Pro Lys Ile Ile Leu Pro Asn Pro Asn Lys Lys Ser Asp
 20 25 30
 Val Ile Ala Arg Ser Glu Glu Val Gln Ala Ile Ile Asp Arg Met Pro
 35 40 45
 Thr Tyr Trp Thr Lys Trp Val Ile Leu Cys Val Gly Val Leu Met Gly
 50 55 60
 Met Ile Ile Leu Leu Gly Phe Leu Ile Gln Tyr Pro Asp Thr Val Asp
 65 70 75 80
 Gly Gln Ile Ser Val Thr Ala Asn Ala Ala Pro Val Arg Leu Val Ala
 85 90 95
 Asn Ser Asn Gly Arg Ile Thr Leu Phe Gln Pro Asn Lys Ala Leu Leu
 100 105 110
 His Lys Asn Asp Val Ile Ser Cys Ile Glu Ser Gly Ala Asp Tyr Lys
 115 120 125
 His Ile Leu Trp Ile Asp Ser Phe Leu Lys Thr Leu Asn Asp Lys Ser
 130 135 140
 Thr Ile Arg Val Ala Leu Pro Asp Thr Leu Leu Leu Gly Glu Val Ser
 145 150 155 160
 Ser Ala Tyr Asn Ser Phe Leu Leu Ser Phe Leu Gln Tyr Glu Arg Leu
 165 170 175
 Leu Thr Ser Asp Ile Tyr Ser Thr Met Arg Gln Lys Leu Gln Gln Gln
 180 185 190
 Ile Ile Ser Asp Glu Ala Val Ile Ala Asn Phe Asn Asn Glu Leu Arg
 195 200 205
 Leu Lys Lys Gln Ile Leu Asp Asn Ser Gln Asn Gln Leu Ser Lys Asp
 210 215 220
 Ser Ile Leu Leu Ser Met Lys Gly Ile Ser Glu Gln Glu Tyr Gln Gln
 225 230 235 240
 Lys Phe Ser Thr His Leu Ser Leu Lys Glu Ser Gln Leu Asn Leu Gln
 245 250 255
 Ser Asn Arg Gln Met Lys Gln Ser Glu Ile Ser Arg Asn Gln Leu Glu
 260 265 270
 Ile Gln Arg Ile Cys Leu Glu Glu Thr Glu Ala Lys Glu Lys Ala Tyr
 275 280 285
 Ser Asp Tyr Ile Thr Arg Lys Asn Glu Leu Ser Asn Ala Ile Lys Leu

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      290                      295                      300
Trp Lys Glu His Tyr Leu Gln Tyr Ala Pro Val Glu Gly Glu Leu Glu
305                      310                      315                      320
Tyr Leu Gly Phe Trp Arg Asn Asn Arg Phe Val Gln Ser Gly Gln Glu
      325                      330                      335
Leu Phe Ser Ile Ile Pro Asp Lys Thr Asn Ile Leu Gly Glu Val Val
      340                      345                      350
Ile Pro Ser Phe Gly Ala Gly Lys Val Glu Val Gly Gln Thr Val Asn
      355                      360                      365
Val Lys Met Asp Asn Tyr Pro Tyr Asp Glu Tyr Gly Leu Leu Lys Gly
      370                      375                      380
Val Val Lys Ser Val Ser Arg Ile Thr Asn Lys Ile Lys Thr Gln Asn
385                      390                      395                      400
Gly Asp Met Asp Thr Tyr Leu Val Ile Ile Ser Phe Pro Asp Gly Thr
      405                      410                      415
Leu Thr Asn Phe Gly Lys Ile Leu Pro Leu Asp Phe Glu Thr Lys Gly
      420                      425                      430
Thr Val Glu Ile Ile Thr Lys Arg Lys Arg Leu Ile Glu Arg Leu Phe
      435                      440                      445
Asp Asn Leu Lys Ser Lys Gly Glu Lys
      450                      455

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<210> 5739
<211> 607
<212> PRT
<213> B.fragilis

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<400> 5739
Ile Ile Leu Asn Met Asn Ser Ile Thr Lys Leu His Val Leu Phe Phe
1      5      10      15
Phe Val Phe Ile Phe Tyr Thr Val Ser Cys Thr Ala Lys Leu Glu Lys
      20      25      30
Gln Thr Tyr Thr Asn Val Tyr Asp Leu His Phe Ala Met Arg Ser Asp
      35      40      45
Ser Ala Val Val Tyr Pro Trp Arg Glu Asn Gly Ala Tyr Ser Asn Tyr
      50      55      60
Thr Ile Pro Ala Tyr Ile Gln Asp Ser Asn Arg Asn Leu Phe Ala Lys
65      70      75      80
Lys Tyr Phe Lys Gly Phe Pro Phe Ser Lys Arg Leu Arg Ser Glu Tyr
      85      90      95
Glu Gln Arg Ile Leu Leu Pro Asn Asn Asn Ile Lys Glu Ala Val Ile
      100     105     110
Gly Phe Glu Gly Lys Gly Asp Asn Ile Lys Leu Val Ser Ile Ile Leu
      115     120     125
Asp Ala Ile Gly Lys Gln Glu Asn Ile Leu Phe Ser Asp Thr Leu Arg
      130     135     140
Phe Arg Pro Asp Ser Ile Leu Ser Leu Val Thr Gln Asn Ile Asn Leu
145     150     155     160
Thr Asn Ala Glu Met Leu Asn Val Arg Ile Asn Val Glu Gly Glu Ile
      165     170     175
Asp Lys Asn Ala Tyr Ile Ala Phe Ser Arg Leu Asp Ile Leu Ile Asp
      180     185     190
Gly Lys Pro Ile Asp Glu Phe Pro Val Arg Thr Leu Ser Pro Leu Ile
      195     200     205
Val Asp Lys Lys Ile Asn Tyr Thr Gly Ile Asn Val Asp Arg Lys Ile
      210     215     220
Gly Leu Glu Gln Ile Asn Glu Ile Asn Asp Lys Lys Ile Ile Gly Leu
225     230     235     240
Gly Glu Ser Val His Gly Asn Asp Gly Ile Lys Asn Leu Ala Tyr Gln

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<210> 5740
<211> 84
<212> PRT
<213> B.fragilis
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Met	Lys	Ile	Lys	Lys	Tyr	Cys	Arg	Tyr	Ile	His	Leu	Trp	Leu	Ser	Leu
1				5					10					15	
Pro	Ala	Gly	Ile	Leu	Ile	Ser	Ile	Ile	Cys	Phe	Thr	Gly	Ala	Ile	Leu
			20					25					30		
Val	Phe	Lys	Glu	Glu	Leu	Leu	Thr	Ile	Met	Gly	Tyr	Asp	Ser	Ile	Arg
		35					40					45			
Glu	Ser	Pro	Leu	Met	Ile	Val	Met	Lys	Leu	His	Arg	Trp	Val	Lys	Asp

50 55 60
 Asp Asn Arg Pro Pro Gly Lys Met Ile Val Ser Ile Phe Thr Phe Phe
 65 70 75 80
 Ser Ser Leu Ser

<210> 5741
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 5741
 Asn Ile Lys Lys Gly Arg Arg Arg Leu Met Phe Asp Tyr His Ser Val
 1 5 10 15
 Leu Gly Leu Tyr Ala Ala Leu Ile Leu Leu Val Cys Ala Leu Thr Gly
 20 25 30
 Leu Met Trp Ser Phe Gln Trp Tyr Arg Asp Ile Val Ser Phe Ile Phe
 35 40 45
 Asp Ala Glu Val Lys Arg Gly Ala Pro Ile Trp Lys Ile Val Arg Ala
 50 55 60
 Leu His Phe Gly Thr Tyr Ala Gly Met Phe Ser Lys Ile Val Thr Phe
 65 70 75 80
 Ile Ala Ala Leu Ile Gly Thr Ser Leu Pro Val Thr Gly Tyr Trp Met
 85 90 95
 Tyr Leu Lys Arg Lys Lys Leu Leu
 100

<210> 5742
 <211> 538
 <212> PRT
 <213> B.fragilis

<400> 5742
 Phe Met Lys Asn Asn Cys Leu Ile Cys Ser Leu Leu Phe Ala Ser Gly
 1 5 10 15
 Ile Gln Asn Ala Trp Gly Thr Gln Ile Thr Asp Arg Lys Ala Asn Pro
 20 25 30
 Asp Gln Ala Lys Pro Asn Ile Ile Leu Ile Met Cys Asp Asp Met Gly
 35 40 45
 Phe Ser Asp Leu Ser Cys Tyr Gly Gly Glu Val His Thr Pro His Ile
 50 55 60
 Asp Phe Leu Ala Glu Asn Gly Ile Arg Phe Ser Gln Phe Lys Asn Thr
 65 70 75 80
 Gly Arg Ser Cys Pro Ser Arg Ala Ala Leu Leu Thr Gly Arg Tyr Gln
 85 90 95
 His Glu Val Gly Met Gly Trp Met Thr Ala Val Asp Glu His Arg Pro
 100 105 110
 Gly Tyr Arg Gly Gln Ile Ser Asp Arg Tyr Pro Thr Ile Ala Glu Val
 115 120 125
 Phe Arg Glu Asn Gly Tyr His Thr Tyr Met Ser Gly Lys Trp His Val
 130 135 140
 Thr Val Glu Gly Ala Phe Thr Gln Pro Asn Gly Ser Tyr Pro Val Glu
 145 150 155 160
 Arg Gly Phe Glu Lys Tyr Tyr Gly Cys Leu Ser Gly Gly Gly Asn Tyr
 165 170 175
 Tyr Thr Pro Lys Pro Val Phe Ser Gly Leu Gln Arg Ile Thr Glu Phe
 180 185 190
 Pro Lys Asp Tyr Tyr Tyr Thr Thr Ala Ile Thr Asp Ser Ala Val Ser
 195 200 205

Phe Ile Arg Gln His Pro Val Asp Glu Pro Met Phe Met Tyr Leu Ala
 210 215 220
 His Tyr Ala Pro His Leu Pro Leu Gln Ala Pro Lys Glu Arg Val Glu
 225 230 235 240
 Ala Cys Arg Glu Lys Tyr Lys Ala Gly Tyr Asp Val Leu Arg Lys Gln
 245 250 255
 Arg Phe Glu Arg Ile Arg Arg Asn Gly Leu Ile Asp Ile Glu Arg Glu
 260 265 270
 Leu Pro Val Phe Glu Lys Glu Phe Gly Gly Lys Arg Pro Ala Trp Asn
 275 280 285
 Ser Leu Thr Pro Gln Gln Gln Glu Arg Trp Ile Thr Glu Met Ala Thr
 290 295 300
 Tyr Ala Ala Met Ile Glu Ile Met Asp Asp Gly Ile Gly Glu Val Ile
 305 310 315 320
 Lys Ala Thr Lys Glu Lys Gly Ile Phe Asp Asn Thr Ile Phe Leu Phe
 325 330 335
 Leu Ser Asp Asn Gly Ala Thr Asn Glu Gly Asp Met Ile Thr Gln Leu
 340 345 350
 Arg Ala Asp Leu Ser Asn Thr Pro Phe Arg Ser Tyr Lys Gln Trp Cys
 355 360 365
 Phe Gln Gly Gly Thr Ser Ala Pro Leu Ile Ile Met Tyr Gly Gly Gly
 370 375 380
 Gln Pro Asp Gly Lys Lys Glu Ala Val Arg His Glu Phe Thr His Ile
 385 390 395 400
 Ile Asp Leu Phe Pro Thr Cys Leu Asp Met Ala Ser Ile Glu Tyr Pro
 405 410 415
 Arg Glu Phe Arg Asn His Ala Ile Asp Ala Pro Gly Gly Arg Thr Ile
 420 425 430
 Leu Pro Ala Leu Lys Gly Lys Lys Leu Ser Lys Arg Asp Leu Phe Phe
 435 440 445
 Glu His Gln Thr Ser Cys Gly Ile Ile Ser Gly Asp Trp Lys Leu Val
 450 455 460
 Arg Ala Asn Gly Lys Gln Pro Trp Glu Leu Phe Asn Leu Leu Gln Asp
 465 470 475 480
 Pro Phe Glu Gln Asn Asp Leu Ser Ala Arg Tyr Pro Asp Arg Val Lys
 485 490 495
 Thr Leu Glu Lys Lys Trp Asn Gln Trp Ala Glu Lys Gln Gln Val Phe
 500 505 510
 Pro Phe Glu Tyr Arg Pro Trp Thr Lys Arg Ile Asn Tyr Tyr Lys Ser
 515 520 525
 Leu Tyr Pro Asp Gln Ser Gly Lys Asp Leu
 530 535

<210> 5743

<211> 338

<212> PRT

<213> B.fragilis

<400> 5743

Lys Lys Arg Lys Asn Lys Asn Ile Met Asn Arg Glu Glu Trp Val Asn
 1 5 10 15
 Lys Gly Phe Val Asp Glu Pro Val Asp Lys Ser Ile Asp Leu Lys Ala
 20 25 30
 Ala Ile Asn Glu Leu Lys Lys Glu Lys Asn Ala Val Ile Leu Gly His
 35 40 45
 Tyr Tyr Gln Lys Gly Glu Ile Gln Asp Ile Ala Asp Tyr Ile Gly Asp
 50 55 60
 Ser Leu Ala Leu Ala Gln Ile Ala Ala Lys Thr Asp Ala Asp Ile Leu
 65 70 75 80

Val Met Cys Gly Val His Phe Met Gly Glu Thr Ala Lys Val Leu Cys
 85 90 95
 Pro Asp Lys Lys Val Leu Val Pro Asp Leu Asn Ala Gly Cys Ser Leu
 100 105 110
 Ala Asp Ser Cys Pro Ala Asp Lys Phe Ala Glu Phe Val Lys Ala His
 115 120 125
 Pro Gly Tyr Thr Val Ile Ser Tyr Val Asn Thr Thr Ala Ala Val Lys
 130 135 140
 Ala Val Thr Asp Val Val Val Thr Ser Thr Asn Ala Lys Gln Ile Val
 145 150 155 160
 Glu Ser Phe Pro Lys Asp Glu Lys Ile Ile Phe Gly Pro Asp Arg Asn
 165 170 175
 Leu Gly Asn Tyr Ile Asn Ser Ile Thr Gly Arg Glu Met Leu Leu Trp
 180 185 190
 Asp Gly Ala Cys His Val His Glu Gln Phe Ser Val Glu Lys Ile Val
 195 200 205
 Glu Leu Lys Ala Gln Tyr Pro Asp Ala Val Val Leu Ala His Pro Glu
 210 215 220
 Cys Lys Ser Val Val Leu Lys Leu Ala Asp Met Val Gly Ser Thr Ala
 225 230 235 240
 Ala Leu Leu Lys Tyr Ala Val Asn Ser Asp Lys Gln Arg Phe Ile Val
 245 250 255
 Ala Thr Glu Ala Gly Ile Leu His Glu Met Gln Lys Lys Cys Pro Gln
 260 265 270
 Lys Thr Phe Ile Pro Ala Pro Pro Asn Asp Ser Thr Cys Gly Cys Asn
 275 280 285
 Glu Cys Asn Phe Met Arg Leu Asn Thr Leu Glu Lys Leu Tyr Asn Cys
 290 295 300
 Leu Lys Tyr Glu Phe Pro Glu Val Thr Val Asp Pro Glu Val Ala Arg
 305 310 315 320
 Glu Ala Val Lys Pro Ile Lys Arg Met Leu Glu Ile Ser Ala Lys Leu
 325 330 335
 Gly Leu

<210> 5744

<211> 474

<212> PRT

<213> B.fragilis

<400> 5744

Asn Thr Met Lys Asn Lys Leu Phe Ile Leu Phe Ala Phe Cys Ile Ser
 1 5 10 15
 Val His Val Tyr Ala Gln Gln Pro Ser Arg Glu Ile Pro Leu Lys Tyr
 20 25 30
 Gly Ala Thr Asn Ile Gly Lys Arg Gln Asp Asp Ala Met Lys Arg Phe
 35 40 45
 Arg Asn Asn Arg Leu Gly Glu Phe Ile His Trp Gly Leu Tyr Ala Ile
 50 55 60
 Pro Gly Gly Glu Trp Lys Gly Lys Val Tyr Asn Gly Ala Ala Glu Trp
 65 70 75 80
 Leu Lys Ser Trp Ala Lys Val Pro Ala Ala Asp Trp Leu Glu Leu Met
 85 90 95
 Lys Gln Trp Asn Pro Val Lys Phe Asp Ala Arg Gln Trp Ala Arg Met
 100 105 110
 Ala Lys Glu Met Gly Val Lys Tyr Val Lys Ile Thr Thr Lys His His
 115 120 125
 Glu Gly Phe Cys Leu Trp Pro Ser Gln Tyr Ser Gln Tyr Thr Val Ala
 130 135 140

Gln Thr Pro Tyr Arg Lys Asp Ile Leu Gly Glu Leu Val Lys Ala Tyr
 145 150 155 160
 Asn Asp Glu Gly Ile Asp Val His Phe Tyr Phe Ser Val Met Asp Trp
 165 170 175
 Ser His Pro Asp Tyr Arg Tyr Glu Ile Thr Ser Lys Glu Asp Ser Ile
 180 185 190
 Ala Phe Ser Arg Phe Leu Thr Phe Thr Asp His Gln Leu Lys Glu Leu
 195 200 205
 Ala Thr Arg Tyr Pro Thr Val Lys Asp Phe Trp Phe Asp Gly Thr Trp
 210 215 220
 Asp Ala Ser Ile Lys Lys Asn Gly Trp Trp Thr Ala His Ala Glu Gln
 225 230 235 240
 Met Leu Lys Glu Leu Val Pro Gly Val Thr Val Asn Ser Arg Leu Arg
 245 250 255
 Ala Asp Asp Tyr Gly Lys Arg His Phe Asp Ser Asn Gly Arg Leu Met
 260 265 270
 Gly Asp Tyr Glu Ser Gly Tyr Glu Arg Arg Leu Pro Asp Pro Val Lys
 275 280 285
 Asp Leu Gln Val Thr Lys Trp Asp Trp Glu Ala Cys Met Thr Val Pro
 290 295 300
 Glu Asn Gln Trp Gly Tyr His Lys Asp Trp Ser Leu Ser Tyr Val Lys
 305 310 315 320
 Thr Pro Ile Glu Val Ile Asp Arg Ile Val His Ala Val Ser Met Gly
 325 330 335
 Gly Asn Met Val Val Asn Phe Gly Pro Gln Pro Asp Gly Asp Phe Arg
 340 345 350
 Ser Glu Glu Lys Glu Leu Ala Met Ala Leu Gly Cys Trp Met Lys Arg
 355 360 365
 Tyr Gly Glu Cys Ile Tyr Gly Cys Asp Tyr Ala Gly Trp Asp Lys Gln
 370 375 380
 Asp Trp Gly Tyr Tyr Thr Arg Lys Gly Gln Glu Val Tyr Met Val Val
 385 390 395 400
 Phe Asn Arg Pro Tyr Ser Gly Leu Leu Lys Val Lys Ile Pro Lys Gly
 405 410 415
 Thr Glu Ile Glu Arg Ala Val Leu Pro Asp Gly Gln Val Val Lys Val
 420 425 430
 Thr Glu Thr Ala Arg Asn Glu Tyr Asn Val Ala Met Pro Ser Gln Asp
 435 440 445
 Pro Gly Glu Pro Phe Ile Ile Lys Leu Gln Val Lys Glu Ala Ser Gly
 450 455 460
 Ala Ala Asp Gly Tyr Arg Asp Ala Leu Thr
 465 470

<210> 5745

<211> 304

<212> PRT

<213> B.fragilis

<400> 5745

Gln Gln Pro Lys Ser Lys Val Ser Met Cys Leu Leu Ile Gly Lys Leu
 1 5 10 15
 Leu Lys Asn Ser Ser Asn Asn Lys Glu Ile Asn Met Asn Asn Leu Leu
 20 25 30
 Leu Ser Ile Asn Trp Asn Pro Asn Pro Glu Leu Phe Asn Leu Phe Gly
 35 40 45
 Ile Ser Ile Arg Tyr Tyr Gly Leu Leu Trp Ala Ile Gly Ile Phe Phe
 50 55 60
 Ala Tyr Ile Val Val His Tyr Gln Tyr Arg Asp Lys Lys Ile Asp Glu
 65 70 75 80

Lys Lys Phe Glu Pro Leu Phe Phe Tyr Cys Phe Phe Gly Ile Leu Ile
 85 90 95
 Gly Ala Arg Leu Gly His Cys Leu Phe Tyr Asp Pro Gly Tyr Tyr Leu
 100 105 110
 Asn His Phe Trp Glu Met Ile Leu Pro Val Lys Phe Leu Pro Gly Gly
 115 120 125
 Gly Trp Lys Phe Thr Gly Tyr Glu Gly Leu Ala Ser His Gly Gly Thr
 130 135 140
 Leu Gly Leu Ile Ile Ser Leu Trp Leu Tyr Cys Arg Lys Thr Lys Met
 145 150 155 160
 Asn Tyr Met Asp Val Val Asp Met Ile Ala Val Ala Thr Pro Ile Thr
 165 170 175
 Ala Cys Phe Ile Arg Leu Ala Asn Leu Met Asn Ser Glu Ile Ile Gly
 180 185 190
 Lys Val Thr Asp Val Ser Trp Ala Phe Val Phe Glu Arg Val Asp Met
 195 200 205
 Gln Pro Arg His Pro Ala Gln Leu Tyr Glu Ala Ile Ala Tyr Phe Ile
 210 215 220
 Leu Phe Leu Val Met Met Phe Leu Tyr Lys Asn Tyr Ser Lys Lys Leu
 225 230 235 240
 His Arg Gly Phe Phe Phe Gly Leu Cys Leu Thr Ala Ile Phe Thr Phe
 245 250 255
 Arg Phe Phe Val Glu Phe Leu Lys Glu Asn Gln Val Asp Phe Glu Asn
 260 265 270
 Ser Met Ala Leu Asn Met Gly Gln Trp Leu Ser Ile Pro Phe Val Ile
 275 280 285
 Ile Gly Ile Tyr Phe Met Phe Phe Tyr Gly Lys Lys Lys Ser Val Lys
 290 295 300

<210> 5746

<211> 244

<212> PRT

<213> B.fragilis

<400> 5746

His Gly Thr Glu His Gly Ser Met Val Lys His Pro Val Arg Asn Tyr
 1 5 10 15
 Arg His Leu Leu Tyr Val Phe Leu Arg Lys Glu Lys Glu Cys Lys Met
 20 25 30
 Lys His Ile Ile Asp Ile Lys Thr Trp Glu Arg Lys Glu Asn Tyr Glu
 35 40 45
 Phe Phe Leu Gly Phe Gln Asn Pro Thr Ile Ser Ile Thr Ser Glu Val
 50 55 60
 Glu Cys Ser Gly Ala Arg Thr Arg Ala Lys Thr Ala Gly Glu Ser Phe
 65 70 75 80
 Phe Leu His Tyr Leu Tyr Ala Val Leu Arg Ala Val Asn Glu Ile Lys
 85 90 95
 Glu Phe Arg Phe Arg Ile Asp Ser Glu Gly Arg Val Val Tyr Phe Asp
 100 105 110
 Thr Val Asp Met Leu Thr Pro Ile Lys Val Ala Asp Asn Gly Arg Phe
 115 120 125
 Phe Thr Val Arg Leu Pro Trp Tyr Pro Asp Phe Lys Thr Phe Tyr Thr
 130 135 140
 Glu Ala Lys Ala Ile Ile Ser Gly Ile Asp Pro Asp Lys Asp Pro Tyr
 145 150 155 160
 Glu Ala Glu Lys Thr Gly Gly Ser Asp Leu Leu Asp Val Val Leu Leu
 165 170 175
 Ser Ala Thr Pro Asp Leu Tyr Phe Thr Ser Leu Thr Cys Thr Gln Glu
 180 185 190

His Arg His Gly Gly Asn Tyr Pro Leu Met Asn Ala Gly Lys Ala Val
 195 200 205
 Ile Arg Gly Gly Val Leu Val Met Pro Ile Ala Met Thr Ile His His
 210 215 220
 Gly Phe Ile Asp Gly His His Leu Ser Leu Phe Tyr Lys Lys Val Glu
 225 230 235 240
 Glu Phe Leu Lys

<210> 5747
 <211> 627
 <212> PRT
 <213> B.fragilis

<400> 5747
 Ala Tyr Asn Glu Asn Lys Thr Lys Thr Gly Lys Asn Lys Gly Asp Thr
 1 5 10 15
 Glu Ala Asp Arg Lys Phe Ile Lys Thr Pro Val Met Lys Tyr Phe Ile
 20 25 30
 Leu Leu Ala Ser Val Leu Phe Leu Ala Gln Ser Cys Ser Val Ala Pro
 35 40 45
 Ser Met Arg Glu Ser Ala Arg Ser Tyr Asp Trp Val Ala Asn Thr Asn
 50 55 60
 Phe Ser Trp Gln Ser Lys Ile Asp Ser Ala Ile Ser Ser Tyr Pro Leu
 65 70 75 80
 Leu Leu His Pro Ser Tyr Glu Ala Lys Gly Ser Val Gly Phe Thr Val
 85 90 95
 Pro Val Phe Tyr Arg Met Asp Lys Lys Arg Val Gly Val Glu Val Arg
 100 105 110
 Ile Lys Tyr Lys Thr Glu Asn Cys Asn Asp Leu Cys Leu Lys Leu Ser
 115 120 125
 Gly Ile Gly Glu Cys Gly Lys Val Ile Ser Ala Asp Thr Phe Arg Leu
 130 135 140
 Ser Ala Ala Glu Ala Trp Thr Val Ala Arg Arg Ser Val Asp Met Ala
 145 150 155 160
 Ser Pro Leu Leu Leu Gly Val Ala Leu Glu Ala Arg Gly Glu Lys Pro
 165 170 175
 Gly Lys Lys Asp Phe Pro Ala Asp Pro Leu Gly Trp Glu Asn Asn Ser
 180 185 190
 Phe Lys Pro Gly Glu Tyr Ser Lys Ile Trp Ile Asp Ser Leu Asp Ile
 195 200 205
 Leu Ile Asp Gly Lys Tyr Ala Val Glu Leu Pro Ser Leu Asn Asn Gly
 210 215 220
 Thr Ala Ala Ser Val Arg Glu Ser Asp Val Met Pro Ala Asn Gly Gly
 225 230 235 240
 Asp Leu Lys Ser Leu Pro Phe Ser Gly Lys Arg Ile Leu Ala Ile Gly
 245 250 255
 Glu Ser Val His Gly Thr Gly Thr Met Asn Asp Met Gly Val Glu Ile
 260 265 270
 Ile Lys Asn Arg Ile Glu His Gly Lys Cys Arg Leu Val Leu Leu Glu
 275 280 285
 Ile Pro Leu Thr Leu Ser Phe His Ile Asn Arg Tyr Leu Glu Gly Asp
 290 295 300
 Glu Arg Phe Lys Pro Asp Ser Ile Ala Ser Tyr Phe Asp Lys Val Leu
 305 310 315 320
 Phe Ser Ser Ser Ser Phe Val Ser Leu Met Arg Trp Val Lys Glu Tyr
 325 330 335
 Asn Arg His Leu Glu Glu Lys Val Ser Phe Phe Gly Ile Asp Arg Asn
 340 345 350

Ile Tyr Arg Leu Gln Ser Ser Ile Asp Leu Phe Tyr Phe Phe Tyr Thr
 355 360 365
 Leu Arg Arg Gly Lys Gly Asp Glu Gly Leu Lys Ala Ile Cys Glu Ser
 370 375 380
 Leu Leu Leu Ser Asp Glu Lys Phe Pro Phe Lys Gly Ala Asp Ser Val
 385 390 395 400
 Leu His Ala Asn His Gly Phe Lys Gly Ile Leu Thr Arg Arg Glu Ala
 405 410 415
 Glu Ile Met Ser Tyr Cys Leu Asn Ser Glu Glu Glu Ala Thr Ala Asp
 420 425 430
 Glu Leu Asn Arg Phe Arg Gly Arg Asp Ser Gly Met Tyr Glu Asn Ala
 435 440 445
 Lys Phe Leu Met Lys Thr Met Leu Lys Lys Asp Glu Thr Thr Thr Val
 450 455 460
 Tyr Cys His Leu Gly His Ala Asn Tyr Thr Ser Ile Ala Gly Trp Leu
 465 470 475 480
 Arg Pro Asp Met Arg Pro Phe Gly Glu Tyr Met Lys Gly Ser Tyr Gly
 485 490 495
 Asp Asp Tyr Ser Ala Val Gly Leu Leu Ala Gly Gly Gly Ser Tyr Leu
 500 505 510
 Thr Trp Val Phe Pro Gly Lys Met Gly Ile Arg Arg Leu Gln Ser Ser
 515 520 525
 Ser Ser Ala Gly Leu Glu Tyr Cys Ile Glu Arg Ser Gly Ile Ser Pro
 530 535 540
 Cys Tyr Leu Pro Met Asp Lys Leu Ser Asp Ala Asp Val Leu Lys Met
 545 550 555 560
 Arg Tyr Ile Gly Asn Thr Glu Ser Lys Ile Gly Gln Phe Gln Trp Val
 565 570 575
 Phe Pro Lys Cys Met Met Asp Gly Val Leu Phe Thr Lys Asn Ala Ser
 580 585 590
 Ala Thr Asn Lys Arg Glu Glu Phe Phe Lys Met Asn Leu Asp Tyr His
 595 600 605
 Val Gln Thr Leu Phe Ala Leu Met Tyr Leu Tyr Glu Lys Lys Arg Lys
 610 615 620
 Trp Ile Pro
 625

<210> 5748

<211> 374

<212> PRT

<213> B.fragilis

<400> 5748

Tyr Lys Lys Asp Tyr Asn Ile Met Ala Leu Gln Cys Gly Ile Val Gly
 1 5 10 15
 Leu Pro Asn Val Gly Lys Ser Thr Leu Phe Asn Cys Leu Ser Asn Ala
 20 25 30
 Lys Ala Gln Ala Ala Asn Phe Pro Phe Cys Thr Ile Glu Pro Asn Val
 35 40 45
 Gly Val Ile Thr Val Pro Asp Glu Arg Leu Asn Lys Leu Ala Glu Leu
 50 55 60
 Val His Pro Asn Arg Ile Val Pro Thr Thr Val Glu Ile Val Asp Ile
 65 70 75 80
 Ala Gly Leu Val Lys Gly Ala Ser Lys Gly Glu Gly Leu Gly Asn Lys
 85 90 95
 Phe Leu Ala Asn Ile Arg Glu Thr Asp Ala Ile Ile His Val Leu Arg
 100 105 110
 Cys Phe Asp Asp Asp Asn Val Thr His Val Asp Gly Ser Val Asn Pro
 115 120 125

Val Arg Asp Lys Glu Ile Ile Asp Tyr Glu Leu Gln Leu Lys Asp Leu
 130 135 140
 Glu Thr Ile Glu Ser Arg Ile Gln Lys Val Gln Lys Gln Ala Gln Thr
 145 150 155 160
 Gly Gly Asp Lys Ala Ala Lys Gln Ala Tyr Asp Val Leu Val Gln Phe
 165 170 175
 Lys Asp Ala Leu Glu Gln Gly Lys Ser Ala Arg Thr Val Thr Phe Glu
 180 185 190
 Thr Lys Asp Glu Gln Lys Ile Ala Lys Glu Leu Phe Leu Leu Thr Ser
 195 200 205
 Lys Pro Val Met Tyr Val Cys Asn Val Asp Glu Ala Ser Ala Val Asn
 210 215 220
 Gly Asn Lys Tyr Val Asp Met Val Arg Glu Ala Val Lys Asp Glu Asp
 225 230 235 240
 Ala Glu Ile Leu Val Val Ala Gly Lys Thr Glu Ala Asp Ile Ala Glu
 245 250 255
 Leu Glu Thr Tyr Glu Asp Arg Gln Met Phe Leu Ala Glu Ile Gly Leu
 260 265 270
 Glu Glu Ser Gly Val Ala Arg Leu Ile Lys Ser Ala Tyr Lys Leu Leu
 275 280 285
 Asn Leu Glu Thr Tyr Phe Thr Ala Gly Val Gln Glu Val Arg Ala Trp
 290 295 300
 Thr Tyr Glu Lys Gly Trp Lys Ala Pro Gln Cys Ala Gly Val Ile His
 305 310 315 320
 Thr Asp Phe Glu Lys Gly Phe Ile Arg Ala Glu Val Ile Lys Tyr Glu
 325 330 335
 Asp Phe Leu Gln Tyr Gly Ser Glu Ala Ala Val Lys Glu Ala Gly Lys
 340 345 350
 Leu Gly Val Glu Gly Lys Glu Tyr Val Val Gln Asp Gly Asp Ile Met
 355 360 365
 His Phe Arg Phe Asn Val
 370

<210> 5749

<211> 735

<212> PRT

<213> B.fragilis

<400> 5749

Asn Gln Lys Glu Lys Asn Lys Asn Met Leu Leu His Arg Phe Pro Val
 1 5 10 15
 Glu Tyr Gln Met Asp Ser Gln Asp Cys Gly Pro Ala Ser Leu Lys Ile
 20 25 30
 Ile Ala Lys His Phe Gly Lys Phe Tyr Ser Leu Gln Phe Met Arg Asp
 35 40 45
 Arg Cys Gly Ile Thr Lys Glu Gly Val Ser Leu Leu Asp Leu Ser Thr
 50 55 60
 Gly Ala Glu Ser Ile Gly Leu Arg Thr Leu Ala Ile Lys Cys Thr Ile
 65 70 75 80
 Asp Asp Val Val Asn Ser Ile Pro Phe Pro Ala Ile Val Phe Trp Asn
 85 90 95
 Asp Ser His Phe Ile Val Val Tyr His Ser Asp Arg Lys Tyr Ile Trp
 100 105 110
 Val Ser Asp Pro Ala Lys Gly Arg Ile Lys Tyr Thr His Glu Glu Phe
 115 120 125
 Arg Lys Gly Trp Tyr Gln Arg Asp Glu Ser Gln Gly Val Leu Leu Ala
 130 135 140
 Val Glu Pro Thr Thr Asp Phe Lys Asn Ser Lys Ala Glu Gln Glu Gln
 145 150 155 160

Lys Arg Asn Ser Phe Ser Ser Ile Leu Lys Tyr Phe Phe Pro Tyr Lys
 165 170 175
 Lys Ser Phe Gly Leu Ile Phe Ile Ile Met Leu Val Val Thr Val Leu
 180 185 190
 Gln Gly Met Leu Pro Phe Ile Ser Lys Ala Val Ile Asp Val Gly Ile
 195 200 205
 Lys Thr Ser Asp Arg Asn Phe Ile Asn Met Val Leu Ile Gly Asn Ile
 210 215 220
 Cys Ile Leu Leu Ser Val Met Ile Phe Asn Val Leu Arg Asp Trp Ile
 225 230 235 240
 Leu Leu His Ile Thr Ala Arg Val Asn Ile Ala Leu Ile Ser Asp Tyr
 245 250 255
 Leu Ile Lys Leu Met Lys Leu Pro Val Thr Phe Phe Glu Asn Lys Leu
 260 265 270
 Leu Gly Asp Ile Leu Gln Arg Ala Gln Asp His Glu Arg Ile Arg Ser
 275 280 285
 Phe Ile Met Asn Asn Ser Leu Ala Leu Ile Phe Ser Thr Leu Thr Phe
 290 295 300
 Ala Val Phe Ser Ile Ile Leu Leu Ile Tyr Asn Thr Ile Ile Phe Tyr
 305 310 315 320
 Ile Phe Leu Ser Gly Ser Val Leu Tyr Ala Cys Trp Val Leu Leu Phe
 325 330 335
 Leu Ser Ile Arg Lys Lys Leu Asp Trp Glu Tyr Phe Glu Leu Leu Ser
 340 345 350
 Lys Asn Gln Ser Tyr Trp Val Glu Thr Val Ser Thr Ile Gln Asp Ile
 355 360 365
 Lys Ile Tyr Asn Tyr Asp Lys Tyr Arg Arg Trp Lys Trp Glu Glu Ile
 370 375 380
 Gln Ala Arg Leu Tyr His Val Asn Lys Arg Val Leu Ala Ile Thr Asn
 385 390 395 400
 Ala Gln Asn Leu Gly Ala Gln Phe Ile Glu Asn Ile Lys Asn Met Ala
 405 410 415
 Ile Val Phe Phe Cys Ala Met Ala Val Ile Lys Gly Glu Ile Thr Phe
 420 425 430
 Gly Ile Met Ile Ser Thr Gln Phe Ile Ile Gly Met Leu Asn Gly Pro
 435 440 445
 Leu Val Gln Phe Ile Asn Phe Val Val Ser Ala Gln Tyr Ala Lys Ile
 450 455 460
 Ser Phe Leu Arg Ile Asn Glu Ile Arg Gln Leu Glu Asn Glu Asp Glu
 465 470 475 480
 Leu Leu Ser Ile Gly Ser Thr Thr Ile Leu Pro Glu Arg Lys Thr Ile
 485 490 495
 Leu Leu Glu Asn Ile His Phe Gln Tyr Thr Pro Asn Ser Pro Leu Val
 500 505 510
 Leu Arg Asn Ile Tyr Leu Gln Ile Pro Glu Asn Lys Ile Thr Ala Ile
 515 520 525
 Val Gly Gly Ser Gly Ser Gly Lys Ser Thr Leu Leu Lys Leu Leu Val
 530 535 540
 Arg Leu Tyr Lys Pro Ser His Gly Glu Ile Lys Met Asp Lys Met Asn
 545 550 555 560
 Val Ser Ala Ile Asn Leu Arg Gln Trp Arg Asn Met Cys Gly Val Val
 565 570 575
 Met Gln Asp Gly Lys Ile Phe Ser Asp Thr Ile Leu Asn Asn Ile Val
 580 585 590
 Leu Asp Asp Glu Gln Ile Asn Tyr Thr Arg Leu Arg Glu Val Cys Arg
 595 600 605
 Ile Ala Gln Ile Glu Asp Glu Ile Asn Ala Met Pro Lys Gly Phe Glu
 610 615 620
 Thr Thr Ile Gly Glu Thr Gly Arg Gly Leu Ser Gly Gly Gln Lys Gln

625		630		635		640
Arg Leu Leu Ile	Ala Arg Ala Leu Tyr	Arg Asp Pro Lys Phe Leu Phe				
	645	650		655		
Met Asp Glu Ala Thr	Asn Ser Leu Asp Ser Ile Asn Glu Arg Lys Ile					
	660	665		670		
Val Asn Ala Leu Asn Asn Ala Phe	Glu Gln Arg Thr Val Val Val Ile					
	675	680		685		
Ala His Arg Leu Ser Thr Ile Arg Asn Ala Asp	Gln Ile Val Val Leu					
	690	695		700		
Asp Lys Gly Phe Ile Val Glu Thr Gly Thr His Glu Ile Leu Met Glu						
705	710	715		720		
Lys Lys Gly His Tyr Phe Glu Leu Val Ser Ser Gln Ile Gln Asp						
	725	730		735		

<210> 5750

<211> 397

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (44)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5750

Leu Pro Leu Leu Arg Leu Ala Arg Pro Asp Ala Asp Glu Pro Phe Arg			
1	5	10	15
Thr Glu Val Trp Tyr Lys Gly Thr Ile Glu His Asp Thr Leu Arg Gly			
	20	25	30
Asp Ile Tyr Val Val Gly Gly Phe Asp Pro Glu Xaa Asp Asp Glu Arg			
	35	40	45
Met Asn Ala Leu Val Glu Glu Val Ile Thr Phe Pro Phe Ser Val Leu			
	50	55	60
Lys Gly Asn Ile Tyr Gly Asp Ile Ser Met Lys Asp Ser Leu Tyr Trp			
65	70	75	80
Gly Ser Gly Trp Ala Trp Asp Asp Thr Pro Ser Ser Phe Gln Pro Tyr			
	85	90	95
Leu Ser Pro Leu Met Tyr His Lys Gly Met Val Lys Val Thr Ala Val			
	100	105	110
Pro Gly Ala Thr Arg Gly Asp Ser Ala Arg Leu Ser Phe Glu Pro Ser			
	115	120	125
Ser Ser Tyr Tyr Thr Met Thr Asn Glu Thr Lys Thr Arg Thr Ser Ser			
	130	135	140
Ala Gly Lys Phe Ser Val Ser Arg Gly Trp Leu Glu Asn Lys Asn Asn			
145	150	155	160
Leu Ile Val Ser Gly Asn Val Glu Asn Arg Arg Ile Gly Asp Val Asn			
	165	170	175
Val Tyr Ser Ser Gln Asp Phe Phe Met His Thr Phe Val Glu Arg Leu			
	180	185	190
Arg Asn Lys Gly Ile Glu Ile Ser Asn His Tyr Ala Phe Asp Ser Phe			
	195	200	205
Arg Ser Asp Ser Leu Ser Ile Cys Met Ala Arg Trp Glu Cys Pro Val			
	210	215	220
Gln Asp Val Ile Asp Gln Ile Met Lys Glu Ser Asp Asn Leu Ser Ala			
225	230	235	240
Glu Ala Leu Leu Cys Arg Leu Gly Ala Arg Ala Thr Gly Lys Lys Gln			
	245	250	255
Val Ser Ala Lys Asp Gly Ile Glu Glu Ile Tyr Arg Leu Ile Gln Asp			
	260	265	270

Leu Gly His Asp Pro Asp Asn Tyr Lys Ile Ala Asp Gly Cys Gly Leu
 275 280 285
 Ser Asn Tyr Asp Tyr Leu Ser Pro Ala Leu Leu Val Asp Phe Leu Lys
 290 295 300
 Phe Ala Tyr Ser Arg Thr Asp Ile Phe Arg Lys Leu Tyr Lys Ala Leu
 305 310 315 320
 Pro Val Ala Gly Ile Asp Gly Thr Leu Lys Asn Arg Met Lys Gln Gly
 325 330 335
 Ala Ala Phe Lys Asn Val His Ala Lys Thr Gly Ser Tyr Thr Ala Ile
 340 345 350
 Asn Thr Leu Ala Gly Tyr Leu Lys Met Ala Asn Gly His Gln Val Ala
 355 360 365
 Phe Ala Ile Met Asn Gln Asn Ile Leu Ser Ala Ala Lys Ala Arg Asn
 370 375 380
 Phe Gln Asn Lys Val Cys Glu Ile Leu Ala Asn His Gln
 385 390 395

<210> 5751

<211> 527

<212> PRT

<213> B.fragilis

<400> 5751

Thr Leu Lys Leu Met Val Lys Lys Phe Asp Phe Leu Val Ile Gly Ser
 1 5 10 15
 Gly Ile Ala Gly Met Ser Phe Ala Leu Lys Val Ala His Lys Gly Lys
 20 25 30
 Val Ala Leu Val Cys Lys Ser Gly Leu Glu Glu Ala Asn Thr Tyr Phe
 35 40 45
 Ala Gln Gly Gly Val Ala Ser Val Thr Asn Leu Leu Val Asp Asn Phe
 50 55 60
 Glu Lys His Ile Glu Asp Thr Met Ile Ala Gly Asp Trp Ile Ser Asp
 65 70 75 80
 Arg Thr Ala Val Glu Lys Val Val Arg Glu Ala Pro Ala Gln Ile Gln
 85 90 95
 Glu Leu Ile Ser Trp Gly Val Asn Phe Asp Lys Asn Glu Lys Gly Glu
 100 105 110
 Phe Asp Leu His Arg Glu Gly Gly His Ser Glu Phe Arg Ile Leu His
 115 120 125
 His Lys Asp Asn Thr Gly Ala Glu Ile Gln Asp Ser Leu Ile Arg Ala
 130 135 140
 Val Gln Gln His Pro Asn Ile Thr Val Ile Glu Asn His Phe Ala Ile
 145 150 155 160
 Glu Ile Leu Thr Gln His His Leu Gly Val Thr Val Thr Arg Gln Thr
 165 170 175
 Pro Asp Ile Lys Cys Tyr Gly Ala Tyr Ile Leu Asp Pro Lys Thr Gly
 180 185 190
 Lys Val Asp Thr Tyr Leu Ala Lys Val Thr Leu Met Ala Thr Gly Gly
 195 200 205
 Val Gly Ala Val Tyr Gln Thr Thr Thr Asn Pro Leu Val Ala Thr Gly
 210 215 220
 Asp Gly Ile Ala Met Val Tyr Arg Ala Lys Gly Thr Val Lys Asp Met
 225 230 235 240
 Glu Phe Val Gln Phe His Pro Thr Ala Leu Tyr His Pro Gly Asp Arg
 245 250 255
 Pro Ser Phe Leu Ile Thr Glu Ala Met Arg Gly Tyr Gly Gly Val Leu
 260 265 270
 Arg Thr Met Asp Gly Lys Glu Phe Met Gln Lys Tyr Asp Pro Arg Leu
 275 280 285

Ser Leu Ala Pro Arg Asp Ile Val Ala Arg Ala Ile Asp Asn Glu Met
 290 295 300
 Lys Asn Arg Gly Asp Asp His Val Tyr Leu Asp Val Thr His Lys Asp
 305 310 315 320
 Pro Glu Glu Thr Lys Lys His Phe Pro Asn Ile Tyr Glu Lys Cys Leu
 325 330 335
 Ser Leu Gly Ile Asp Ile Thr Arg Glu Tyr Ile Pro Val Ala Pro Ser
 340 345 350
 Ala His Tyr Leu Cys Gly Gly Ile Lys Val Asp Leu Asn Gly Gln Ser
 355 360 365
 Ser Ile Glu Arg Leu Tyr Ala Ala Gly Glu Cys Ser Cys Thr Gly Leu
 370 375 380
 His Gly Gly Asn Arg Leu Ala Ser Asn Ser Leu Ile Glu Ala Val Val
 385 390 395 400
 Tyr Ala Asp Ala Ala Ala Arg His Cys Leu Ser Val Ile Asp Gln Tyr
 405 410 415
 Thr Tyr Asn Glu Glu Ile Pro Glu Trp Asn Asp Glu Gly Thr Arg Ser
 420 425 430
 Pro Glu Glu Met Val Leu Ile Thr Gln Ser Met Lys Glu Val Asn Gln
 435 440 445
 Ile Met Ser Thr Tyr Val Gly Ile Val Arg Ser Asp Leu Arg Leu Lys
 450 455 460
 Arg Ala Trp Asp Arg Leu Asp Ile Leu Tyr Glu Glu Thr Glu Ser Leu
 465 470 475 480
 Phe Lys Arg Ser Val Ala Ser Lys Glu Ile Cys Glu Leu Arg Asn Met
 485 490 495
 Ile Asn Val Gly Tyr Leu Ile Met Arg Met Ala Met Glu Arg Lys Glu
 500 505 510
 Ser Arg Gly Leu His Tyr Thr Val Asp Tyr Pro His Ala Gly Lys
 515 520 525

<210> 5752

<211> 261

<212> PRT

<213> B.fragilis

<400> 5752

Thr Glu Leu Ser Met Thr Ile Ile Phe Pro Ser Pro Ile Phe Gly Pro
 1 5 10 15
 Val His Ser Arg Arg Leu Gly Val Ser Leu Gly Ile Asn Leu Leu Pro
 20 25 30
 Ser Asp Gly Lys Val Cys Ser Phe Asp Cys Ile Tyr Cys Glu Cys Gly
 35 40 45
 Tyr Asn Gly Glu His Arg Pro Lys Ser Ser Leu Pro Thr Arg Glu Glu
 50 55 60
 Val Arg Met Ala Leu Glu Glu Lys Leu Lys Glu Met Lys Ser Asn Gly
 65 70 75 80
 Pro Ala Pro Asp Val Leu Thr Phe Ala Gly Asn Gly Glu Pro Thr Ala
 85 90 95
 His Pro His Phe Pro Glu Ile Ile Glu Asp Thr Leu Ala Leu Arg Asp
 100 105 110
 Ala Tyr Phe Pro Asp Ala Lys Val Ser Val Leu Ser Asn Ala Thr Phe
 115 120 125
 Ile Asn Arg Pro Ala Val Phe Asp Ala Leu Asn Arg Val Asp Asn Asn
 130 135 140
 Ile Leu Lys Leu Asp Thr Val Asp Glu Glu Tyr Ile Arg Thr Val Asp
 145 150 155 160
 Arg Pro Asn Gly Arg Tyr Asp Leu Asn Gly Thr Val Gly Leu Leu Lys
 165 170 175

Ala Phe Lys Gly Asn Cys Ile Val Gln Thr Met Phe Met Lys Gly Lys
 180 185 190
 Tyr Lys Gly Lys Asp Val Asp Asn Thr Ser Asp Lys Tyr Val Leu Pro
 195 200 205
 Trp Leu Lys Val Val Lys Asp Ile Ala Pro Arg Gln Val Met Ile Tyr
 210 215 220
 Thr Ile Asp Arg Glu Thr Pro Asp Gln Asp Leu Gln Lys Ala Thr His
 225 230 235 240
 Glu Glu Leu Asp Arg Ile Val Ala Leu Leu Thr Lys Glu Gly Leu Ser
 245 250 255
 Ala Thr Ala Ser Tyr
 260

<210> 5753

<211> 892

<212> PRT

<213> B.fragilis

<400> 5753

Val Asp Leu Arg Glu Thr Ala Ile Phe Ala Leu Leu Phe Met Asn Leu
 1 5 10 15
 Lys Arg Arg Leu Ser Val Ser Asn Asp Ile Glu Leu Thr Pro Met Met
 20 25 30
 Lys Gln Phe Leu Asp Leu Lys Ala Lys His Pro Asp Ala Val Met Leu
 35 40 45
 Phe Arg Cys Gly Asp Phe Tyr Glu Thr Tyr Ser Thr Asp Ala Ile Ile
 50 55 60
 Ala Ala Glu Ile Leu Gly Ile Thr Leu Thr Lys Arg Ala Asn Gly Lys
 65 70 75 80
 Gly Lys Thr Val Glu Met Ala Gly Phe Pro His His Ala Leu Asp Thr
 85 90 95
 Tyr Leu Pro Lys Leu Ile Arg Ala Gly Lys Arg Val Ala Ile Cys Asp
 100 105 110
 Gln Leu Glu Asp Pro Lys Thr Thr Lys Lys Leu Val Lys Arg Gly Ile
 115 120 125
 Thr Glu Leu Val Thr Pro Gly Val Ser Ile Asn Asp Asn Val Leu Asn
 130 135 140
 Tyr Lys Glu Asn Asn Phe Leu Ala Ala Val His Phe Gly Lys Ser Ala
 145 150 155 160
 Cys Gly Ile Ala Phe Leu Asp Ile Ser Thr Gly Glu Phe Leu Thr Ala
 165 170 175
 Glu Gly Pro Phe Asp Tyr Val Asp Lys Leu Leu Asn Asn Phe Ala Pro
 180 185 190
 Lys Glu Ile Leu Phe Glu Arg Gly Lys Arg Gly Met Phe Glu Gly Asn
 195 200 205
 Phe Gly Ser Lys Phe Phe Thr Phe Glu Leu Asp Asp Trp Val Phe Thr
 210 215 220
 Glu Ser Ser Ser Arg Glu Lys Leu Leu Lys His Phe Glu Thr Lys Asn
 225 230 235 240
 Leu Lys Gly Phe Gly Val Glu His Leu Lys Asn Gly Ile Ile Ala Ser
 245 250 255
 Gly Ala Ile Leu Gln Tyr Leu Asp Met Thr Glu His Thr Gln Val Gly
 260 265 270
 His Ile Thr Ser Leu Ala Arg Ile Glu Glu Asp Lys Tyr Val Arg Leu
 275 280 285
 Asp Lys Phe Thr Val Arg Ser Leu Glu Leu Ile Gly Ser Met Asn Asp
 290 295 300
 Gly Gly Ser Ser Leu Leu His Val Ile Asp Lys Thr Ile Ser Pro Met
 305 310 315 320

Gly Ala Arg Leu Leu Lys Arg Trp Met Val Phe Pro Leu Lys Asp Glu
 325 330 335
 Lys Pro Ile Asn Asp Arg Leu Asn Val Val Glu Tyr Phe Phe Arg Lys
 340 345 350
 Pro Asp Phe Arg Glu Leu Ile Glu Asp Glu Leu His Arg Ile Gly Asp
 355 360 365
 Leu Glu Arg Ile Ile Ser Lys Val Ala Val Gly Arg Val Ser Pro Arg
 370 375 380
 Glu Val Val Gln Leu Lys Val Ala Leu Gln Ala Ile Glu Pro Ile Lys
 385 390 395 400
 Glu Ala Cys Gln Gln Ala Asp Asn Pro Ser Leu Asn Arg Ile Gly Glu
 405 410 415
 Gln Leu Asn Leu Cys Ile Ser Ile Arg Asp Arg Ile Glu Lys Glu Ile
 420 425 430
 Asn Asn Asp Pro Pro Leu Leu Ile Asn Lys Gly Gly Val Ile Lys Asp
 435 440 445
 Gly Val Asp Thr Glu Leu Asp Glu Leu Arg Gln Ile Ala Tyr Ser Gly
 450 455 460
 Lys Asp Tyr Leu Leu Lys Ile Gln Gln Arg Glu Ser Glu Leu Thr Gly
 465 470 475 480
 Ile Pro Ser Leu Lys Ile Ala Tyr Asn Ser Val Phe Gly Tyr Tyr Ile
 485 490 495
 Glu Val Arg Asn Val His Lys Asp Lys Val Pro Gln Glu Trp Ile Arg
 500 505 510
 Lys Gln Thr Leu Val Asn Ala Glu Arg Tyr Ile Thr Gln Glu Leu Lys
 515 520 525
 Glu Tyr Glu Glu Lys Ile Leu Gly Ala Glu Asp Lys Ile Leu Val Leu
 530 535 540
 Glu Thr Arg Leu Tyr Thr Glu Leu Val Gln Ala Leu Ser Glu Phe Ile
 545 550 555 560
 Pro Ala Ile Gln Ile Asn Ala Asn Gln Ile Ala Arg Ile Asp Cys Leu
 565 570 575
 Leu Ser Phe Ala Asn Val Ala Lys Glu Asn Asn Tyr Ile Arg Pro Val
 580 585 590
 Ile Glu Asp Asn Asp Val Leu Asp Ile Arg Gln Gly Arg His Pro Val
 595 600 605
 Ile Glu Lys Gln Leu Pro Ile Gly Glu Lys Tyr Ile Ala Asn Asp Val
 610 615 620
 Leu Leu Asp Asn Ala Thr Gln Gln Val Ile Ile Thr Gly Pro Asn
 625 630 635 640
 Met Ala Gly Lys Ser Ala Leu Leu Arg Gln Thr Ala Leu Ile Thr Leu
 645 650 655
 Leu Ala Gln Ile Gly Ser Phe Val Pro Ala Glu Ser Ala His Ile Gly
 660 665 670
 Leu Val Asp Lys Ile Phe Thr Arg Val Gly Ala Ser Asp Asn Ile Ser
 675 680 685
 Val Gly Glu Ser Thr Phe Met Val Glu Met Asn Glu Ala Ser Asp Ile
 690 695 700
 Leu Asn Asn Ile Ser Ser Arg Ser Leu Val Leu Phe Asp Glu Leu Gly
 705 710 715 720
 Arg Gly Thr Ser Thr Tyr Asp Gly Ile Ser Ile Ala Trp Ala Ile Val
 725 730 735
 Glu Tyr Ile His Glu His Pro Lys Ala Lys Ala Arg Thr Leu Phe Ala
 740 745 750
 Thr His Tyr His Glu Leu Asn Glu Met Glu Lys Ser Phe Lys Arg Ile
 755 760 765
 Lys Asn Tyr Asn Val Ser Val Lys Glu Val Asp Asn Lys Val Ile Phe
 770 775 780
 Leu Arg Lys Leu Glu Arg Gly Gly Ser Glu His Ser Phe Gly Ile His

785 790 795 800
 Val Ala Lys Met Ala Gly Met Pro Lys Ser Ile Val Lys Arg Ala Asn
 805 810 815
 Glu Ile Leu Lys Gln Leu Glu Ser Asp Asn Arg Gln Gln Gly Ile Ser
 820 825 830
 Gly Lys Pro Leu Ala Glu Val Ser Glu Asn Arg Gly Gly Met Gln Leu
 835 840 845
 Ser Phe Phe Gln Leu Asp Asp Pro Ile Leu Cys Gln Ile Arg Asp Glu
 850 855 860
 Ile Leu His Leu Asp Val Asn Asn Leu Thr Pro Ile Glu Ala Leu Asn
 865 870 875 880
 Lys Leu Asn Asp Ile Lys Lys Ile Val Arg Gly Lys
 885 890

<210> 5754

<211> 599

<212> PRT

<213> B.fragilis

<400> 5754

Val Val Asn Ile Asp Asn Asn Leu Val Tyr Phe Met Lys Thr Lys Leu
 1 5 10 15
 Pro Leu Leu Leu Leu Phe Phe Val Leu Phe Leu Phe Lys Cys Asp Leu
 20 25 30
 Lys Ala Asp Pro Gly His Lys Ser Pro Leu Glu Tyr Arg Trp Val Asn
 35 40 45
 His Pro Leu Asp Phe Tyr Leu Asn Val Thr Val Asp Ser Thr Thr Thr
 50 55 60
 Pro His Ser Leu Leu Phe Glu Thr Met Tyr Glu Lys Lys Gly Ile Ala
 65 70 75 80
 Ser Phe Leu Leu Pro Ile Tyr Gln Leu Glu Lys Asn Ser Leu Thr Phe
 85 90 95
 Glu Ile Lys Ile Arg Tyr Lys Thr Glu Asn Cys Glu Asn Leu Phe Leu
 100 105 110
 Ala Ile Thr Ser Val Gly Asp Cys Glu Asn Ile Asn Ser Ile Asp Thr
 115 120 125
 Ile Gln Leu Asn Ala Thr Gln Asp Trp Lys Glu Cys Thr Arg Ile Leu
 130 135 140
 Lys Thr Lys Lys Ala Tyr Phe Leu Asn Ile Ser Val Gly Ala Val Gly
 145 150 155 160
 Tyr Gly Gln Arg Lys Gly Lys Ile Trp Ile Ser Asp Leu Glu Val Leu
 165 170 175
 Gly Asp Gly Lys Ala Ile Gly Asp Asn Pro Gln Gln Glu Tyr Lys Lys
 180 185 190
 Glu Asp Ile His Leu Lys Ala Thr Asp Leu Ile His Trp Asn Asn Lys
 195 200 205
 Glu Tyr Asp Asn Leu Pro Phe Leu Asn Lys Lys Ile Leu Gly Leu Gly
 210 215 220
 Glu Thr Ala His Gly Thr Glu Thr Met Asn Asp Ile Gly Ile Glu Ile
 225 230 235 240
 Ser Lys Glu Arg Ile Leu Lys His Gln Cys Arg Phe Ile Leu Leu Glu
 245 250 255
 Ile Pro Leu Glu Phe Ser Leu Tyr Ile Asn Arg Tyr Val Gln Asn Asp
 260 265 270
 Lys Asn Phe Lys Phe Glu Tyr Ile Ser Glu Arg Phe Glu Pro Tyr Leu
 275 280 285
 Phe Ser Asp Ser Ile Leu Ser Phe Ile Arg Trp Ile Lys Glu Tyr Asn
 290 295 300
 Ser Ala His Asn Gln Lys Ile Ser Ile Leu Gly Phe Asp Leu Asn Thr

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305          310          315          320
Thr Pro Leu Leu Ser Arg Ala Asp Leu Phe Asn Phe Phe Tyr Asn Leu
          325          330          335
Lys Ser Gly Gly His Val Glu Glu Ile Asp Thr Ile Cys Glu Ser Leu
          340          345          350
Leu Asp Ser Lys Thr Ser Phe Glu Lys Ile Ile Ser Lys Phe Asp Lys
          355          360          365
Ser Ile Arg Leu Ala Asp Cys Leu Asp Lys Gly Glu Leu Lys Leu Ile
          370          375          380
His Arg Cys Leu Glu Ile Thr Gly Arg Ser Ser Ser Ser Tyr Phe Arg
385          390          395          400
Phe Val Glu Arg Asp Arg Tyr Met Asn Asp Ile Val Thr Phe Ile Ile
          405          410          415
Asp His Phe Leu Asn Thr Asn Glu Thr Val Thr Leu Phe Gly His Leu
          420          425          430
Gly His Leu Asn Tyr Lys Gly Asn Arg Val Glu Leu Met Asp Tyr Phe
          435          440          445
Ser Leu Gly Tyr Tyr Leu Lys Ser Arg Tyr Ala Lys Asn Tyr Ser Cys
          450          455          460
Ile Gly Leu Ile Thr Asn Arg Gly Thr Ala Met Leu Pro Val Ser Ala
465          470          475          480
Thr Asn Gly Gly Val Thr Lys Leu Glu Gln Ala Pro Gln Gly Ser Leu
          485          490          495
Glu Phe Gln Val Asn Lys Leu Lys Met Asp Ser Val Tyr Leu Ser Met
          500          505          510
Ser Lys Phe Thr Cys Ser Asp Val Phe Leu Leu Arg Glu Leu Gly Ser
          515          520          525
Gly Phe Ser Gln Asn Lys Lys Ile Ile Pro Asn Gln Phe Gln Tyr Met
          530          535          540
Ile Pro Lys Ser Arg Met Glu Gly Val Ile Phe Thr Lys Glu Ser Val
545          550          555          560
Asn Phe Met Lys Gly Lys Glu Phe Phe Lys Lys Asn Met Asn Val Glu
          565          570          575
Val Val Thr Met Arg Phe Tyr Ile Lys Ala Leu Glu Lys Leu Thr Gln
          580          585          590
Lys Lys Ile Asp Leu Asn Ile
          595

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<210> 5755

<211> 470

<212> PRT

<213> B.fragilis

<400> 5755

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Ser Ser Ile Phe Ala Asp Ala Asn Leu Asn Ser Glu Phe Met Asn Glu
1          5          10          15
Leu Thr Gly Ala Asp Phe Lys Ser Ala Thr Ala Asp Asp Asn Lys Lys
          20          25          30
Leu Phe Ile Glu Thr Tyr Gly Cys Gln Met Asn Val Ala Asp Ser Glu
          35          40          45
Val Ile Ala Ser Val Met Gln Met Ala Gly Tyr Ser Val Ala Glu Thr
          50          55          60
Leu Glu Glu Ala Asp Ala Val Phe Met Asn Thr Cys Ser Ile Arg Asp
65          70          75          80
Asn Ala Glu Gln Lys Ile Leu Asn Arg Leu Glu Phe Phe His Ser Met
          85          90          95
Lys Lys Lys Lys Lys His Leu Ile Val Gly Val Leu Gly Cys Met Ala
          100          105          110
Glu Arg Val Lys Asp Asp Leu Ile Glu His His His Val Asp Leu Val

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      115              120              125
Val Gly Pro Asp Ala Tyr Leu Thr Leu Pro Glu Leu Ile Ala Ser Val
  130              135              140
Glu Ala Gly Glu Lys Ala Met Asn Val Glu Leu Ser Thr Thr Glu Thr
  145              150              155              160
Tyr Arg Asp Val Ile Pro Ser Arg Ile Cys Gly Asn His Ile Ser Gly
      165              170              175
Phe Val Ser Ile Met Arg Gly Cys Asn Asn Phe Cys Thr Tyr Cys Ile
      180              185              190
Val Pro Tyr Thr Arg Gly Arg Glu Arg Ser Arg Asp Val Glu Ser Ile
      195              200              205
Leu Asn Glu Val Ala Asp Leu Val Ser Lys Gly Tyr Lys Glu Ile Thr
      210              215              220
Leu Leu Gly Gln Asn Val Asn Ser Tyr Arg Phe Glu Lys Glu Gly Gly
  225              230              235              240
Glu Val Val Thr Phe Pro Met Leu Leu Arg Leu Val Ala Glu Ala Ala
      245              250              255
Pro Gly Ile Arg Val Arg Phe Thr Thr Ser His Pro Lys Asp Met Ser
      260              265              270
Asp Glu Thr Leu Glu Val Ile Ala Gln Val Pro Asn Val Cys Lys His
      275              280              285
Ile His Leu Pro Val Gln Ser Gly Ser Ser Arg Ile Leu Lys Leu Met
      290              295              300
Asn Arg Lys Tyr Thr Arg Glu Trp Tyr Leu Asp Arg Val Ala Ala Ile
  305              310              315              320
Lys Arg Ile Val Pro Asp Cys Gly Leu Thr Thr Asp Ile Phe Ser Gly
      325              330              335
Phe His Ser Glu Thr Glu Glu Asp His Arg Glu Ser Leu Ser Leu Met
      340              345              350
Glu Ala Cys Gly Tyr Asp Ala Ala Phe Met Phe Lys Tyr Ser Glu Arg
      355              360              365
Pro Gly Thr Tyr Ala Ser Lys His Leu Glu Asp Asn Val Ser Glu Glu
      370              375              380
Ile Lys Val Arg Arg Leu Asn Glu Ile Ile Ala Leu Gln Asn Arg Leu
  385              390              395              400
Ser Ala Glu Ser Asn Asn Arg Cys Ile Gly Lys Thr Tyr Glu Val Leu
      405              410              415
Val Glu Gly Val Ser Lys Arg Ser Arg Asp Gln Leu Phe Gly Arg Thr
      420              425              430
Glu Gln Asn Arg Val Val Val Phe Asp Arg Gly Thr His Arg Ile Gly
      435              440              445
Asp Phe Val Asn Val Arg Ile Thr Glu Ala Ser Ser Ala Thr Leu Lys
      450              455              460
Gly Glu Glu Val Phe Ser
465              470

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<210> 5756

<211> 228

<212> PRT

<213> B.fragilis

<400> 5756

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Lys Asn Ile Ile Arg Ile Met Gly Thr Asn Asn Ser Asp Phe Tyr Leu
1              5              10              15
Pro Val Tyr Val Ile Asn Leu Lys Glu Arg Thr Glu Arg Arg Gln His
      20              25              30
Ile Glu Glu Gln Phe Gln Gly Lys Val Glu Phe Ala Leu His Trp Ile
      35              40              45
Glu Ala Ile Glu His Ser Ile Gly Ala Val Gly Leu Trp Gln Ser Met

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      50                      55                      60
Leu Lys Ala Val Gln Thr Ala Ile Asp Lys Arg Asp Asp Ile Met Ile
65                      70                      75                      80
Ile Cys Glu Asp Asp His Ile Phe Thr Pro Ala Tyr Asn Lys Asp Tyr
      85                      90                      95
Leu Phe Ala Asn Ile Ile Gly Ala Asn Ala Gln Gly Ser Glu Leu Leu
      100                      105                      110
Ser Gly Gly Val Gly Gly Phe Gly Thr Ala Val Pro Val Asp Thr Asn
      115                      120                      125
Arg Tyr Trp Met Asp Trp Phe Trp Ser Thr Gln Phe Ile Ile Ile Phe
      130                      135                      140
Lys Pro Leu Phe Gln Lys Ile Leu Asp Tyr Asp Phe Lys Asp Thr Asp
145                      150                      155                      160
Thr Ala Asp Gly Val Leu Ser Val Leu Ala Lys Asp Lys Met Thr Ile
      165                      170                      175
Tyr Pro Phe Ile Ser Val Gln Lys Asp Phe Gly Tyr Ser Asp Val Thr
      180                      185                      190
Val Tyr Asn Gly Thr Pro Gly Met Ile Ser Asn Tyr Phe Ser Gln Ala
      195                      200                      205
Asn Tyr Arg Leu Arg Met Ile His His Val Ser His Lys Phe Lys Glu
210                      215                      220
Gln Ala Lys Arg
225

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<210> 5757

<211> 238

<212> PRT

<213> B.fragilis

<400> 5757

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Asn Thr Ala Ile Asn Tyr Ser Ser Glu Trp Ala Lys Gln Ser Thr Ile
1                      5                      10                      15
Asn Tyr Tyr Asp Ile Glu Pro Gly Lys Ile His Val Val Glu Phe Gly
      20                      25                      30
Ala Asn Ile Pro Thr Pro Ser Asp Tyr Lys Ile Asp Ile Gln Thr Asp
      35                      40                      45
Ile Cys Asn Leu Val Phe Ile Gly Lys Asn Trp Gln Lys Lys Gly Gly
      50                      55                      60
Asp Lys Val Leu Gly Ala Tyr Arg Lys Leu Lys Ser Asp Gly Phe Arg
65                      70                      75                      80
Cys Thr Leu Thr Ile Ile Gly Ser Ile Ile Arg Glu Pro Tyr Asp Glu
      85                      90                      95
Asp Glu Asn Leu Val Ile Ile Pro Tyr Leu Asp Lys Ser Gln Pro Glu
      100                      105                      110
His Leu Glu Arg Phe Cys Asn Ile Leu Gln Glu Ala His Phe Leu Val
      115                      120                      125
Leu Pro Thr Glu Phe Asp Ala Phe Gly Ile Val Phe Cys Glu Ala Ser
      130                      135                      140
Ala Tyr Ala Val Pro Ser Ile Ala Ala Asn Val Gly Gly Val Ser Gln
145                      150                      155                      160
Pro Val Arg Glu Gly Lys Asn Gly Tyr Leu Leu Met Pro Asp Ala Thr
      165                      170                      175
Ala Glu Asp Tyr Ala Glu Lys Ile Lys Ser Val Phe Ala Asp Lys Glu
      180                      185                      190
Asn Tyr Leu Lys Leu Arg Met Ser Ser Arg Gln Glu Phe Glu Thr Arg
      195                      200                      205
Leu Asn Trp Glu Val Trp Ser Glu Lys Val Asn Lys Ile Leu Glu Glu
210                      215                      220
Ile Val Glu Glu His His Lys Asn Asn Gly Asn Lys Gln Gln

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225

230

235

<210> 5758

<211> 94

<212> PRT

<213> B.fragilis

<400> 5758

Glu	Leu	Arg	Ile	Leu	Val	His	Ala	Gly	Ile	Pro	Ala	Pro	Lys	Thr	Ile
1				5					10					15	
Gln	Phe	Ile	Ser	Gly	Arg	Phe	Leu	Leu	Arg	Ile	Gln	Ala	Val	Ala	His
			20					25					30		
Tyr	Phe	Arg	Phe	Pro	Pro	Gly	Lys	Tyr	Ala	Leu	Glu	Ala	Met	Ile	Gly
		35					40					45			
Met	Gln	His	Arg	Val	Arg	Pro	Phe	Lys	Arg	Glu	Leu	Leu	Val	Arg	Gln
	50					55					60				
Gln	Lys	Arg	Leu	Ala	Tyr	Arg	Phe	Gln	Ala	Phe	Val	Ala	Phe	Thr	Ser
65					70					75					80
Ala	Glu	Arg	Val	Lys	Glu	Val	Lys	Gln	Val	Asp	Thr	Ala	Leu		
				85					90						

<210> 5759

<211> 88

<212> PRT

<213> B.fragilis

<400> 5759

Leu	Val	Ser	Ile	Met	Lys	Lys	Leu	Asn	Leu	Phe	Ile	Leu	Phe	Ser	Phe
1				5					10					15	
Cys	Phe	Ser	Ile	Ile	Thr	Trp	Gly	Gln	Ala	Asn	Phe	Ala	Ala	Ile	Asp
			20					25					30		
Ser	Leu	Ile	Lys	Lys	Glu	Leu	Pro	Gln	Gly	Ser	Glu	Val	Gly	Ile	Ser
			35				40					45			
Val	Tyr	Asp	Leu	Thr	Ala	Arg	Lys	Thr	Leu	Tyr	Thr	Tyr	Arg	Asp	Thr
	50					55					60				
Lys	Leu	Ser	Arg	Pro	Ala	Ser	Thr	Met	Lys	Leu	Leu	Thr	Thr	Ile	Thr
65					70					75					80
Ala	Leu	Gly	Pro	Ala	Gly	Arg	Arg								
				85											

<210> 5760

<211> 562

<212> PRT

<213> B.fragilis

<400> 5760

Lys	Lys	Glu	Met	Lys	Val	Leu	Asp	Phe	Lys	Pro	Arg	Leu	Phe	Ser	Thr
1				5					10					15	
Leu	Lys	Asn	Tyr	Ser	Lys	Glu	Thr	Phe	Met	Ser	Asp	Leu	Met	Ala	Gly
			20					25					30		
Ile	Ile	Val	Gly	Ile	Val	Ala	Leu	Pro	Leu	Ala	Ile	Ala	Phe	Gly	Ile
		35					40					45			
Ala	Ser	Gly	Val	Ser	Pro	Glu	Lys	Gly	Ile	Ile	Thr	Ala	Ile	Ile	Ala
	50					55					60				
Gly	Phe	Ile	Ile	Ser	Leu	Gly	Gly	Ser	Lys	Val	Gln	Ile	Gly	Gly	
65					70				75					80	
Pro	Thr	Gly	Ala	Phe	Ile	Val	Ile	Ile	Tyr	Gly	Ile	Ile	Gln	Gln	Tyr
				85					90				95		
Gly	Glu	Ala	Gly	Leu	Ile	Val	Ala	Thr	Leu	Met	Ala	Gly	Ile	Leu	Leu

<210> 5761
 <211> 810
 <212> PRT
 <213> B.fragilis

<400> 5761

Phe	Asn	Ala	Val	Lys	Cys	Met	Lys	Gln	Ile	Tyr	Ser	Thr	Leu	Leu	Leu
1				5					10					15	
Leu	Val	Leu	Leu	Ile	Phe	Pro	Ser	Leu	Leu	Phe	Ala	Thr	Glu	Pro	Glu
			20					25					30		
Ser	Val	Asp	Arg	Val	Pro	Ala	Ile	Arg	Gly	Val	Val	Tyr	Asp	Glu	Thr
		35					40					45			
Asp	Thr	Pro	Leu	Ala	Ser	Ala	Thr	Val	Gln	Ile	Glu	Gly	Thr	Thr	Ile
	50					55					60				
Gly	Thr	Thr	Thr	Asn	Ser	Glu	Gly	Arg	Phe	Ile	Leu	Arg	Asn	Leu	Ala
65				70					75					80	
Arg	Lys	Val	Tyr	Lys	Ile	Asn	Val	Ser	Phe	Val	Gly	Tyr	Ala	Thr	Gln
				85					90					95	
Thr	Arg	Thr	Val	Asp	Leu	Thr	Ser	Arg	Ser	Val	Ala	Gln	Leu	Ser	Phe
			100					105					110		
Thr	Leu	Leu	Pro	Asp	Asp	Asn	Leu	Ser	Thr	Val	Glu	Val	Phe	Gly	
		115				120					125				
Glu	Arg	Tyr	Lys	Gln	Pro	Lys	Lys	Leu	Asp	Ala	Ile	Thr	Arg	Met	Pro
130						135					140				
Leu	Arg	Pro	Ser	Glu	Gln	Ile	Gln	Ser	Ile	Ser	Val	Ile	Ser	Glu	Lys
145				150					155					160	
Ser	Ile	Thr	Glu	Gln	Gly	Ala	Leu	Thr	Val	Thr	Asp	Val	Ala	Arg	Asn
				165				170						175	
Val	Pro	Gly	Val	Thr	Leu	Phe	Gly	Ser	Tyr	Gly	Gly	Val	Arg	Glu	Ser
			180					185					190		
Met	Ser	Ile	Arg	Gly	Tyr	Arg	Gly	Val	Pro	Ile	Leu	Lys	Asn	Gly	Val
		195					200					205			
Arg	Ile	Asp	Ser	Asp	Phe	Arg	Thr	Gly	Ser	Ala	Leu	Ser	Glu	Met	Gln
210					215						220				
Gly	Val	Glu	Ser	Ile	Gln	Val	Ile	Lys	Gly	Ser	Ala	Ala	Val	Thr	Gln
225				230					235					240	
Gly	Ile	Gly	Asn	Asp	Leu	Gly	Ser	Ala	Gly	Gly	Val	Ile	Asn	Val	Val
			245					250					255		
Thr	Lys	Thr	Pro	Lys	Phe	Thr	Asn	Glu	Gly	Glu	Val	Ser	Leu	Arg	Ala
			260					265					270		
Gly	Ser	Trp	Gly	Leu	Phe	Arg	Pro	Thr	Phe	Asp	Val	Gln	Ser	Val	Leu
		275					280					285			
Asp	Lys	Asn	Gln	Thr	Ile	Ala	Phe	Arg	Met	Asn	Gly	Ala	Phe	Glu	Arg
	290					295					300				
Ser	Asp	Asn	Tyr	Arg	Pro	Val	Ile	His	Ser	Asn	Arg	Val	Tyr	Ile	Asn
305					310					315				320	
Pro	Ser	Leu	Glu	Trp	Arg	Pro	Asp	Asp	Lys	Thr	Ser	Val	Thr	Ile	Glu
			325						330					335	
Met	Asp	Tyr	Leu	Asn	Asp	Asn	Arg	Thr	Pro	Tyr	Thr	Ser	Ser	Val	Asn
		340					345					350			
Leu	Ser	Lys	Asp	Thr	Glu	Glu	Asn	Leu	Tyr	Asp	Met	Pro	His	Asn	Lys
		355					360					365			
Phe	Leu	Gly	Phe	Lys	Asn	Asp	Asn	Val	Asn	Asn	Lys	Thr	Leu	Thr	Tyr
	370					375					380				
Ala	Ala	Arg	Ile	Thr	Arg	Gln	Leu	Thr	Asp	Asn	Ile	Ser	Val	Arg	Ala
385					390					395				400	
Ala	Tyr	Phe	Gly	Ser	Ser	Tyr	Lys	Val	Asp	Asn	Thr	Ser	Thr	Ser	Val
				405					410					415	

Lys Thr Val Val Asn Lys Glu Tyr Asn Met Arg Arg Arg Thr Ile Ser
 420 425 430
 Arg Ser Leu Arg Asp Asp Arg Asn Ser Thr Phe Gln Leu Asp Phe Ile
 435 440 445
 Gly Arg Asp Ile Phe Thr Gly Pro Val Lys His Thr Phe Gln Leu Gly
 450 455 460
 Phe Asp Tyr Lys Asn Thr Asp Leu Ser Ile Thr Asn Tyr Thr Pro Val
 465 470 475 480
 Asn Ile Asp Thr Ile Asn Val Leu Ala Pro Ser Ile Ser Asn Val Leu
 485 490 495
 Pro Val Ala Val Lys Phe Val Pro Glu Ile Pro Val Glu Ser Asn Ser
 500 505 510
 Ser Ser Tyr Gly Ile Met Ala Gln Glu Val Met Thr Phe Asn Lys Tyr
 515 520 525
 Ile Lys Ala Ile Leu Gly Leu Arg Tyr Ser Tyr Ile Ser Ser Gln Asp
 530 535 540
 Gly Thr Ser Ala Gly Pro Thr Thr Gly Asp Ala Trp Asn Pro Met Leu
 545 550 555 560
 Gly Ile Met Leu Thr Pro Val Lys Asn Ile Asn Leu Phe Gly Ser Tyr
 565 570 575
 Thr Thr Thr Thr Ser Leu Leu His Ala Ala Arg Arg Met Glu Asn Gly
 580 585 590
 Asp Glu Ile Gly Pro Ser Lys Thr Arg Gln Phe Glu Val Gly Ile Lys
 595 600 605
 Ser Asp Trp Leu Asn Asn Arg Leu Arg Phe Asn Leu Thr Tyr Phe Asp
 610 615 620
 Ile Leu Thr Lys Asn Leu Ser Tyr Ser Thr Tyr His Pro Gly Thr Thr
 625 630 635 640
 Gln Pro Thr Gly Tyr Phe Asp Lys Ala Gly Ser Leu Lys Arg Lys Gly
 645 650 655
 Ile Glu Thr Glu Leu Ser Gly Ser Ile Leu Glu Asn Leu Gln Val Met
 660 665 670
 Met Gly Tyr Ala Tyr Leu Asp Ala Lys Tyr Glu Asn Ser Pro Ala Phe
 675 680 685
 Lys Asn Gly Ser Ala Pro Met Asn Thr Pro Lys His Thr Ala Asn Gly
 690 695 700
 Trp Ile Gln Tyr Arg Phe Asp Lys Gly Val Leu Lys Arg Leu Ser Ala
 705 710 715 720
 Gly Ile Gly Val Tyr Phe Val Gly Lys Arg Pro Val Asn Asp Phe Ala
 725 730 735
 Ile Lys Pro Asp Gly His Gly Ser Met Thr Asn Glu Lys Pro Phe Asp
 740 745 750
 Met Pro Gly Tyr Thr Thr Ile Asn Ala Gln Leu Ala Tyr Ser Ile His
 755 760 765
 Lys Phe Thr Ala Arg Val Tyr Leu Asn Asn Leu Phe Asp Ala Leu Gly
 770 775 780
 Tyr Asn Ser Tyr Tyr Arg Gly Gly Tyr Ile Asn Gln Ile Asp Pro Arg
 785 790 795 800
 Asn Phe Ser Ala Val Ile Ser Tyr His Phe
 805 810

<210> 5762

<211> 372

<212> PRT

<213> B.fragilis

<400> 5762

Thr His Ala Val Met Ser Met Ala Ile Asn Leu Asp Asn Gln Phe Asn
 1 5 10 15

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Leu Pro Ala Asp Tyr Gly Ser Leu Asp Ser Arg Trp Asn Arg Asn Gln
    20                25                30
Val Gly Pro Phe Ile Lys Leu Leu Lys Lys Phe Val Lys Asp Ser Arg
    35                40                45
Phe Asp Ala Phe Tyr His Ser Asn Glu Asn Leu Tyr Gln Glu Ala Val
    50                55                60
Ser Arg Phe Met Pro Ile Tyr Lys Ser Ile Asp Thr Gln Trp Tyr Asn
    65                70                75                80
Asp Phe Tyr Gly Gln Lys Ser Asn Asp Arg Phe His Ile Ile Leu Ser
    85                90                95
Met Ser Asn Gly Pro Gly Asn Tyr Gly Pro Ser Val Thr Asp Lys Glu
    100               105               110
Asn Ile His Asn Val Phe Ser Val Met Gly Ala Trp Val Thr Asp Ser
    115               120               125
Val Gly Met Val Val Tyr Pro Pro Glu Leu Ile Leu Pro Ile Leu Ile
    130               135               140
His Glu Phe Asn His Ser Phe Ile Asn Phe Asp Pro Glu Met Phe Arg
    145               150               155               160
Thr Ser Gly Glu Gln Ile Tyr Ala Ala Val Gly Glu Gln Met Ala Arg
    165               170               175
Gln Ala Tyr Gly Gln Trp Ser Ile Val Leu Thr Glu Ala Met Val Arg
    180               185               190
Ala Ala Val Ile Lys Tyr Met Lys Asp His Asn Phe Pro Ala Val Glu
    195               200               205
Ile Thr Lys Glu Thr Val Ile Gln Lys Thr Arg Gly Phe Val Trp Ile
    210               215               220
Ser Lys Leu Val Asp Glu Leu Glu Lys Tyr Ser Ser Asp Arg Thr Thr
    225               230               235               240
Tyr Pro Thr Leu Asn Ser Tyr Met Pro Arg Leu Ala Glu Ala Tyr Thr
    245               250               255
Gly Phe Ala Gln Tyr Thr Ala Asn Tyr Asp Ser Ile Arg Pro Lys Val
    260               265               270
Val Ser Ile Asp Glu Phe Thr Asn Gly Asp Thr Thr Val Arg Ser Asp
    275               280               285
Ile Lys Thr Ile Thr Val His Phe Asp Arg Pro Leu Val Gly Arg Gly
    290               295               300
His Ser Phe Asn Tyr Gly His Leu Gly Met Glu Ala Met Pro Lys Ile
    305               310               315               320
Ile Asn Val Asn Tyr Ala Asn Asp Asn Arg Thr Val Ile Ile Gly Val
    325               330               335
Glu Leu Leu Pro Gly Lys Glu Tyr Gly Ile Thr Leu Leu Gly Leu Ser
    340               345               350
Phe Arg Thr Pro Glu Gly Asp Ala Ile Lys Pro Tyr Glu Ile Ser Phe
    355               360               365
Lys Thr Ala Glu
    370

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<210> 5763

<211> 373

<212> PRT

<213> B.fragilis

<400> 5763

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Ile Pro Ile Leu Asp Pro Ile Ile Asn Pro Leu His Asn Thr Ile Met
1                5                10                15
Lys Asn Lys Ser Ala Cys Phe Phe Val Leu Ser Leu Phe Val Cys Ser
    20                25                30
Met Phe Thr Ser Cys Asn Lys Glu Ser Thr Thr Glu Cys Gln Thr Ile
    35                40                45

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Asp Phe Ser Thr Leu Phe Asp Gly Gln Pro Glu Lys Ile Pro Leu Lys
 50 55 60
 Glu Trp Ala Lys Ser Ile His Phe Val Gln Leu Glu Thr Asn Asp Ser
 65 70 75 80
 Ile Leu Ile Gly Asn Ile Arg Ala Thr Ile Leu His Lys Asp Lys Ile
 85 90 95
 Leu Val His His Asn Asn Leu Ser Leu Phe Asp Leu Ser Gly Lys Phe
 100 105 110
 Ile Cys Asn Ile Gly Ser Lys Gly Gly Gly Pro Thr Glu Tyr Ser Gly
 115 120 125
 Ile Asn Asn Ala Trp Thr Asp Asp Glu Gly Ile His Ile Phe Asp Ile
 130 135 140
 Ala Asn Lys Ile Lys Thr Tyr Asn Trp Asn Gly Lys Trp Ile Lys Thr
 145 150 155 160
 Glu Pro Ile Pro Glu Ser Asn Ile Lys Glu Val Phe Pro Leu Ala Ser
 165 170 175
 Gly Asn Asn Ile Lys Ala Gly Tyr Ile Gln Asn Ile Thr Gly Asn Glu
 180 185 190
 Pro His Lys Ile Tyr Leu Phe Lys Asp Ser Thr Ile Leu Ala Lys Ile
 195 200 205
 Pro Tyr Gly Lys Ser Phe Gln Lys Gly Glu Met Thr Met Val Phe Tyr
 210 215 220
 Asn Glu Cys Tyr Pro Phe His Ala Asn Gly Arg Thr Phe Phe Lys Glu
 225 230 235 240
 Met Phe Asn Asp Thr Ile Phe Ser Ile Asp Asn Gln Tyr Gln Pro Val
 245 250 255
 Pro Arg Trp Tyr Ile Glu Leu Gly Lys Tyr Lys Ile Ala Glu Asp Ala
 260 265 270
 Arg Tyr Thr Leu Thr Asp Pro Arg Lys Ser Val Phe Asp Asn Ala Ala
 275 280 285
 Thr Leu Thr Pro Ile Gly Lys Trp Asp Asn Lys Leu Phe Phe Ser Ala
 290 295 300
 Arg Ala Asn Lys Gln Asn Tyr Leu Phe Tyr Tyr Asp Leu Lys Glu Lys
 305 310 315 320
 Lys Ser Asn Ser Ile Gln Ile Ser Tyr Pro Glu Asn Ser Phe Ala Ile
 325 330 335
 Pro Glu Glu His Ser Phe Ile Pro Lys Cys Met Ser Asp Asp Gly Lys
 340 345 350
 Tyr Leu Ile Ser Tyr Glu Ile Gln Glu Asn Asp Glu Asn Pro Val Ile
 355 360 365
 Ile Leu Ala Glu Lys
 370

<210> 5764

<211> 965

<212> PRT

<213> B.fragilis

<400> 5764

Ser Cys Lys Phe Ala Pro Ser Tyr Lys Ala Tyr Ile Ile Asn His Tyr
 1 5 10 15
 Lys Gln Lys Val Ile Ala Met Glu Tyr Asn Phe Arg Glu Ile Glu Lys
 20 25 30
 Lys Trp Gln Lys Ile Trp Val Asp Asn His Thr Tyr Gln Val Asn Glu
 35 40 45
 Asp Ala Ser Lys Gln Lys Phe Tyr Val Leu Asn Met Phe Pro Tyr Pro
 50 55 60
 Ser Gly Ala Gly Leu His Val Gly His Pro Leu Gly Tyr Ile Ala Ser
 65 70 75 80

Asp Ile Tyr Ala Arg Tyr Lys Arg Leu Gln Gly Phe Asn Val Leu Asn
 85 90 95
 Pro Met Gly Tyr Asp Ala Tyr Gly Leu Pro Ala Glu Gln Tyr Ala Ile
 100 105 110
 Gln Thr Gly Gln His Pro Ala Ile Thr Thr Val Asn Asn Ile Asn Arg
 115 120 125
 Tyr Arg Glu Gln Leu Asp Lys Ile Gly Phe Ser Phe Asp Trp Asn Arg
 130 135 140
 Glu Ile Arg Thr Cys Asp Pro Glu Tyr Tyr His Trp Thr Gln Trp Ala
 145 150 155 160
 Phe Ile Lys Met Phe Asn Ser Tyr Tyr Cys Asn Asp Glu Lys Gln Ala
 165 170 175
 Arg Pro Ile Glu Glu Leu Ile Glu Ala Phe Ser Thr Asn Gly Thr Gln
 180 185 190
 Gly Met Asn Val Ala Cys Gly Glu Glu Met Asp Phe Thr Ala Asp Glu
 195 200 205
 Trp Asn Ala Lys Ser Glu Lys Glu Gln Gln Glu Ile Leu Met Asn Tyr
 210 215 220
 Arg Ile Ala Tyr Leu Gly Asn Thr Met Val Asn Trp Cys Pro Ala Leu
 225 230 235 240
 Gly Thr Val Leu Ala Asn Asp Glu Val Val Asp Gly Val Ser Glu Arg
 245 250 255
 Gly Gly Tyr Pro Val Ile Gln Lys Val Met Arg Gln Trp Cys Leu Arg
 260 265 270
 Val Ser Ala Tyr Ala Gln Arg Leu Leu Asp Gly Leu Glu Thr Val Glu
 275 280 285
 Trp Thr Asp Ser Leu Lys Glu Thr Gln Arg Asn Trp Ile Gly Arg Ser
 290 295 300
 Glu Gly Ala Glu Met Asn Phe Lys Val Lys Asp Ser Asp Ile Glu Phe
 305 310 315 320
 Thr Ile Phe Thr Thr Arg Ala Asp Thr Val Phe Gly Val Thr Phe Met
 325 330 335
 Val Leu Ala Pro Glu Ser Glu Leu Val Ala Lys Leu Thr Thr Pro Glu
 340 345 350
 Gln Lys Ala Glu Val Asp Ala Tyr Leu Asp Arg Thr Lys Lys Arg Thr
 355 360 365
 Glu Arg Glu Arg Ile Ala Asp Arg Ser Val Ser Gly Val Phe Ser Gly
 370 375 380
 Ser Tyr Ala Ile Asn Pro Leu Thr Asn Glu Pro Ile Pro Val Trp Ile
 385 390 395 400
 Ser Asp Tyr Val Leu Ala Gly Tyr Gly Thr Gly Ala Ile Met Ala Val
 405 410 415
 Pro Ala His Asp Ser Arg Asp Tyr Ala Phe Ala Lys His Phe Asn Leu
 420 425 430
 Glu Ile Arg Pro Leu Ile Glu Gly Cys Asp Val Ser Glu Glu Ser Phe
 435 440 445
 Asp Ala Lys Glu Gly Ile Met Met Asn Ser Pro Arg Pro Gly Ala Pro
 450 455 460
 Glu Gly Gly Leu Val Leu Asn Gly Leu Thr Val Lys Glu Ala Ile Ala
 465 470 475 480
 Lys Thr Lys Glu Tyr Ile Lys Ala Thr Gly Leu Gly Arg Val Lys Val
 485 490 495
 Asn Phe Arg Leu Arg Asp Ala Ile Phe Ser Arg Gln Arg Tyr Trp Gly
 500 505 510
 Glu Pro Phe Pro Val Tyr Tyr Lys Asp Gly Met Pro Tyr Met Ile Asp
 515 520 525
 Glu Ser Cys Leu Pro Leu Glu Leu Pro Glu Val Ala Lys Phe Leu Pro
 530 535 540
 Thr Glu Thr Gly Glu Pro Pro Leu Gly His Ala Thr Lys Trp Ala Trp

545		550		555		560
Asp Thr Val Asn Lys Cys Val Thr Asp Asn Glu Asn Ile Asp Asn Ile						
	565		570		575	
Thr Ile Phe Pro Leu Glu Leu Asn Thr Met Pro Gly Phe Ala Gly Ser						
	580		585		590	
Ser Ala Tyr Tyr Leu Arg Tyr Met Asp Pro Arg Asn His Glu Ala Leu						
	595		600		605	
Val Ser Pro Ala Val Asp Gln Tyr Trp Lys Asn Val Asp Leu Tyr Val						
	610		615		620	
Gly Gly Thr Glu His Ala Thr Gly His Leu Ile Tyr Ser Arg Phe Trp						
	625		630		635	
Asn Lys Phe Leu His Asp Trp Gly Ile Ser Val Ala Glu Glu Pro Phe						
	645		650		655	
Gln Lys Leu Val Asn Gln Gly Met Ile Gln Gly Arg Ser Asn Phe Val						
	660		665		670	
Tyr Arg Ile Lys Asp Thr Asn Thr Phe Val Ser Leu Asn Leu Lys Asp						
	675		680		685	
Gln Tyr Glu Val Thr Pro Ile His Val Asp Val Asn Ile Val Ser Asn						
	690		695		700	
Asp Ile Leu Asp Leu Glu Ala Phe Lys Ala Trp Arg Pro Glu Tyr Glu						
	705		710		715	
Thr Ala Glu Phe Ile Leu Glu Asp Gly Lys Tyr Ile Cys Gly Trp Ala						
	725		730		735	
Val Glu Lys Met Ser Lys Ser Met Phe Asn Val Val Asn Pro Asp Met						
	740		745		750	
Ile Val Glu Lys Tyr Gly Ala Asp Thr Leu Arg Met Tyr Glu Met Phe						
	755		760		765	
Leu Gly Pro Val Glu Gln Ser Lys Pro Trp Asp Thr Asn Gly Ile Asp						
	770		775		780	
Gly Val His Arg Phe Ile Lys Lys Phe Trp Ser Leu Phe Tyr Asp Arg						
	785		790		795	
Asn Gly Glu Tyr Leu Val Lys Asp Glu Pro Ala Thr Lys Glu Glu Leu						
	805		810		815	
Lys Ala Leu His Lys Leu Ile Lys Lys Val Thr Gly Asp Ile Glu Gln						
	820		825		830	
Phe Ser Tyr Asn Thr Ser Val Ser Ala Phe Met Ile Cys Val Asn Glu						
	835		840		845	
Leu Ser Ser Leu Lys Cys Asn Lys Lys Glu Val Leu Glu Gln Leu Ile						
	850		855		860	
Val Val Leu Ala Pro Phe Ala Pro His Val Cys Glu Glu Leu Trp Asp						
	865		870		875	
Thr Leu Gly Asn Ile Thr Ser Val Cys Asp Ala Gln Trp Pro Ala Phe						
	885		890		895	
Asn Glu Gln Tyr Leu Val Glu Asp Thr Val Asn Tyr Thr Ile Ser Phe						
	900		905		910	
Asn Gly Lys Ala Arg Phe Asn Met Glu Phe Pro Ala Asp Ala Ala Ser						
	915		920		925	
Asp Ala Ile Gln Ala Thr Val Leu Ala Asp Glu Arg Ser Leu Lys Trp						
	930		935		940	
Thr Glu Gly Lys Thr Pro Lys Lys Val Ile Val Val Pro Lys Lys Ile						
	945		950		955	
Val Asn Ile Val Ile						
	965					

<210> 5765

<211> 250

<212> PRT

<213> B.fragilis

<400> 5765

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Met Ser Phe Ser Leu Val Thr Val Thr Tyr Asn Ser Ala Gln Thr Leu
1      5      10      15
Arg Asp Thr Ile Thr Ser Val Leu Ser Gln Thr His Gln Ala Ile Glu
20      25      30
Tyr Ile Ile Ile Asp Gly Phe Ser Lys Asp Asn Thr Val Ala Ile Ile
35      40      45
Lys Glu Tyr Glu Pro Leu Phe Asn Gly Arg Leu Lys Trp Ile Ser Glu
50      55      60
Lys Asp Asn Gly Leu Tyr Asp Ala Met Asn Lys Gly Phe Gln Met Ala
65      70      75      80
Thr Gly Asp Val Ile Gly Ile Ile Asn Ser Asp Asp Leu Ile Ser Asp
85      90      95
Pro Asn Ala Ile Glu Lys Val Ile Lys Cys Phe Glu Ser Asp Thr Ser
100     105     110
Ile Asp Ala Val Tyr Ala Asp Leu Tyr Tyr Val Ala Gln Asn Asp Ile
115     120     125
Ser Lys Ile Val Arg Tyr Trp Lys Ser Gly Gly Gln Arg Pro Phe Cys
130     135     140
Lys Gly Trp His Pro Ala His Pro Thr Phe Tyr Val Lys Lys Glu Val
145     150     155     160
Tyr Gln Arg Tyr Gly Leu Phe Asp Leu Asp Phe Lys Phe Ala Ala Asp
165     170     175
Phe Glu Leu Met Leu Arg Leu Ile Asp Lys Glu His Ile Lys Leu Tyr
180     185     190
Tyr Leu Pro Glu Pro Leu Val Arg Met Arg Leu Gly Gly Thr Thr Ser
195     200     205
Lys Asn Leu Ser Asn Ile Arg Lys Gly Asn Leu Glu Cys Ile Asn Ala
210     215     220
Phe Lys Lys Asn Gly Ile Lys Val Ser Met Leu Tyr Pro Leu Tyr Arg
225     230     235     240
Leu Leu Pro Lys Ile Arg Gln Tyr Phe Gln
245     250

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<210> 5766

<211> 211

<212> PRT

<213> B.fragilis

<400> 5766

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Asn Lys Arg Phe Glu Phe Met Asn Thr Leu Leu Met Ser Leu Ile Phe
1      5      10      15
Thr Thr Met Thr Tyr Glu Met Pro Lys Leu Pro Tyr Ala Asn Asn Ala
20      25      30
Leu Glu Pro Val Ile Ser Gln Gln Thr Ile Asp Tyr His Tyr Gly Lys
35      40      45
His Leu Gln Thr Tyr Val Asn Asn Leu Asn Ser Leu Val Pro Gly Thr
50      55      60
Glu Tyr Glu Gly Lys Thr Val Glu Ala Ile Val Ala Ser Ala Pro Asp
65      70      75      80
Gly Ala Ile Phe Asn Asn Ala Gly Gln Val Leu Asn His Thr Leu Tyr
85      90      95
Phe Leu Gln Phe Ala Pro Lys Pro Ala Lys Asn Glu Pro Ala Gly Lys
100     105     110
Leu Gly Glu Ala Ile Lys Arg Asp Phe Gly Ser Phe Glu Asn Phe Lys
115     120     125
Lys Glu Phe Asn Ala Ala Ser Val Gly Leu Phe Gly Ser Gly Trp Ala
130     135     140
Trp Leu Ser Val Asp Lys Asp Gly Lys Leu His Ile Thr Lys Glu Pro

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145		150		155		160
Asn Gly Ser Asn Pro Val Arg Ala Gly Leu Lys Pro Leu Leu Gly Phe						
		165		170		175
Asp Val Trp Glu His Ala Tyr Tyr Leu Asp Tyr Gln Asn Arg Arg Ala						
		180		185		190
Asp His Val Asn Lys Leu Trp Glu Ile Ile Asp Trp Asp Val Val Glu						
		195		200		205
Lys Arg Leu						
210						

<210> 5767

<211> 126

<212> PRT

<213> B.fragilis

<400> 5767

Arg Phe Glu Ser Gly Asp Gly Leu Asp Thr Cys Gln Glu Lys Lys Ser						
1		5		10		15
Val Thr Leu Phe Phe Phe Leu Gln Leu Ala Gln Gln Ile Pro Ile Val						
		20		25		30
Ile Phe Lys Phe Lys Arg Gln Ile Ile Arg Val Ala Val Val Phe Glu						
		35		40		45
Asn Arg Val Glu Val Arg Ala Val Val Asn Ala Phe Val Ser Asn Ala						
		50		55		60
Gly Asn Ala Glu Ile Met Arg Asn Ile Gly Tyr Cys Ile Met Gln Leu						
		65		70		75
Phe Gly Lys Gly Val Gly Gly Ile Tyr Gln Lys Ala Asn Val Val Leu						
		85		90		95
Ala Thr Glu Ser Phe Gln Gly Ser Pro Gly His Gly Ala Ala Gln Ala						
		100		105		110
Tyr Ala Met Met Gln Val Asp Ile Leu Phe Val Thr Phe Gly						
		115		120		125

<210> 5768

<211> 283

<212> PRT

<213> B.fragilis

<400> 5768

Ser Val Arg Ser Val Thr Leu Ser Leu Pro Val Ser Asn Phe Arg Leu						
1		5		10		15
Leu Thr Phe Asn Asn Leu Ser Ser Ile Met Lys Ala Val Ile Leu Ala						
		20		25		30
Gly Gly Phe Gly Thr Arg Leu Ser Glu Ala Thr Asn Leu Ile Pro Lys						
		35		40		45
Pro Met Val Glu Ile Gly Gly Lys Pro Ile Leu Trp His Ile Met Lys						
		50		55		60
Thr Tyr Ser His Tyr Gly Ile Asn Asp Phe Val Ile Cys Cys Gly Tyr						
		65		70		75
Lys Gln Tyr Ile Ile Lys Glu Tyr Phe Ala Asn Tyr Phe Arg His Asn						
		85		90		95
Ser Asp Met Thr Val Asp Leu Ser Asn Asn Thr Thr Thr Ile Leu Asp						
		100		105		110
Asn His Ser Glu Asn Trp Lys Val Thr Met Val Asp Thr Gly Leu Asn						
		115		120		125
Thr Gln Thr Gly Gly Arg Ile Arg Arg Val Gln Lys Tyr Leu Gly Asn						
		130		135		140
Glu Arg Phe Leu Leu Thr Tyr Gly Asp Gly Val Thr Asp Leu Asn Ile						
145		150		155		160

Gly Asp Thr Leu Lys Ala His Glu Ser Ser Gly Cys Leu Leu Ser Leu
 165 170 175
 Thr Ala Tyr Lys Pro Gly Gly Lys Phe Gly Ala Leu Gln Leu Asp Leu
 180 185 190
 Asp Thr Asp Lys Val Leu Ser Phe Gln Glu Lys Pro Asp Gly Asp Arg
 195 200 205
 Asn Trp Ile Asn Ala Gly Tyr Phe Val Cys Glu Pro Glu Val Phe Asp
 210 215 220
 Tyr Ile Pro Glu Gly Asp Ser Thr Ile Phe Glu Arg Gln Pro Leu Glu
 225 230 235 240
 Ser Ile Ala Lys Ala Gly Arg Met His Ala Phe Arg His Thr Gly Phe
 245 250 255
 Trp Lys Pro Met Asp Thr Leu Arg Asp Asn Thr Glu Leu Asn Glu Met
 260 265 270
 Trp Asp Gln Gly Val Ala Pro Trp Lys Val Trp
 275 280

<210> 5769

<211> 374

<212> PRT

<213> B.fragilis

<400> 5769

Asn Val Gly Ser Gly Ser Arg Ser Leu Glu Ser Val Val Ser Arg Met
 1 5 10 15
 Gly Ile Asp Ile Phe Asp Asn Phe Tyr Arg Gly Lys Arg Val Leu Val
 20 25 30
 Thr Gly His Thr Gly Phe Lys Gly Ser Trp Leu Ser Ile Trp Leu His
 35 40 45
 Glu Leu Gly Ala Glu Val Ile Gly Val Ala Gln Asp Pro Phe Thr Ala
 50 55 60
 Arg Asp Asn Phe Val Leu Ser Gly Ile Gly Glu Lys Ile Lys Ala Asp
 65 70 75 80
 Leu Arg Ala Asp Ile Arg Asp Gly Glu Arg Ile Lys Ala Ile Phe Gln
 85 90 95
 Glu Tyr Gln Pro Glu Ile Val Phe His Leu Ala Ala Gln Pro Leu Val
 100 105 110
 Arg Leu Ser Tyr Asp Ile Pro Val Glu Thr Tyr Glu Thr Asn Val Met
 115 120 125
 Gly Thr Ile His Val Leu Glu Ala Val Arg Ser Thr Asp Ser Val Lys
 130 135 140
 Val Gly Val Met Ile Thr Thr Asp Lys Cys Tyr Glu Asn Lys Glu Gln
 145 150 155 160
 Ile Trp Gly Tyr Arg Glu Asn Glu Pro Met Gly Gly Tyr Asp Pro Tyr
 165 170 175
 Ser Ser Ser Lys Gly Ala Ala Glu Ile Ala Ile Ala Ser Trp Arg Arg
 180 185 190
 Ser Phe Phe Asn Pro Glu Gln Tyr Asp Lys His Gly Lys Ser Ile Ala
 195 200 205
 Ser Val Arg Ala Gly Asn Val Ile Gly Gly Gly Asp Trp Ala Leu Asp
 210 215 220
 Arg Ile Ile Pro Asp Cys Ile Lys Ala Leu Glu Ser Gly Ala Ala Ile
 225 230 235 240
 Asp Ile Arg Ser Pro Lys Ala Ile Arg Pro Trp Gln His Val Leu Glu
 245 250 255
 Pro Leu Ser Gly Tyr Met Leu Leu Ala Gln Lys Met Trp Asp Ala Pro
 260 265 270
 Thr Asp Tyr Cys Glu Gly Trp Asn Phe Gly Pro His Ser Glu Ser Ile
 275 280 285

2501

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Ser Thr Val Trp Asp Val Ala Thr Arg Val Val Ser Glu Tyr Gly Arg
 290                295                300
Gly Glu Leu Arg Asp Leu Ser Thr Pro Asp Ala Leu His Glu Ala Arg
305                310                315                320
Leu Leu Met Leu Asp Ile Ser Lys Ala Arg Phe Cys Leu Gly Trp Glu
                325                330                335
Pro Arg Met Asn Ile Gly Gln Thr Val Gly Leu Thr Val Asp Trp Tyr
                340                345                350
Lys Arg Tyr Arg Glu Glu Glu Val Tyr Asp Val Cys Val Asp Gln Ile
                355                360                365
Lys Asp Tyr Leu Leu Lys
 370

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<210> 5770
 <211> 61
 <212> PRT
 <213> B.fragilis

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<400> 5770
Leu Met Met Ser Val Ile Trp Leu Phe Asn Ser Pro Glu Glu Ser Asp
1                5                10                15
Cys Ser Leu Gly Val Ile Ile Gly Ile Leu Leu Ser Gln Ala Leu Ser
                20                25                30
Ser Leu Pro Gln Asp Ile Lys Thr Lys Lys Asn Arg Leu Arg Lys Ser
                35                40                45
Gly Thr Lys Tyr Phe Ile Met Phe Arg Leu Gly Tyr Lys
 50                55                60

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<210> 5771
 <211> 477
 <212> PRT
 <213> B.fragilis

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<400> 5771
Thr Lys Arg Ser Tyr Leu Leu Asn Gln Arg Thr Phe Gly Phe Lys Pro
1                5                10                15
Lys Lys Ser Ser Phe Ala Thr Gln Lys Leu Met Pro Met Leu Leu Ile
                20                25                30
Ile Asp Asp Asp Ser Gly Val Arg Ser Ser Leu Ser Phe Met Leu Lys
                35                40                45
Arg Ala Gly Tyr Gln Val Ile Ala Val Thr Gly Pro Arg Glu Ala Met
 50                55                60
Glu Val Val Arg Ser Glu Ala Pro Ser Leu Ile Leu Met Asp Met Asn
65                70                75                80
Phe Thr Leu Ser Thr Ser Gly Glu Glu Gly Leu Thr Leu Leu Lys Gln
                85                90                95
Val Lys Val Phe Arg Pro Asp Val Pro Val Ile Leu Met Thr Ala Trp
                100                105                110
Gly Ser Ile Gln Leu Ala Val Gln Gly Met Gln Ala Gly Ala Phe Asp
                115                120                125
Phe Ile Thr Lys Pro Trp Asn Asn Ala Ala Leu Leu Gln Arg Ile Glu
                130                135                140
Thr Ala Leu Glu Leu Thr Ala Thr Pro Lys Asp Thr Pro Gln Glu Gln
145                150                155                160
Ser Gly Thr Leu Asn Arg Ser His Ile Ile Gly Lys Ser Arg Gly Leu
                165                170                175
Met Glu Val Leu Asn Thr Val Ala Arg Ile Ala Pro Thr Asn Ala Pro
                180                185                190
Val Leu Ile Thr Gly Glu Ser Gly Thr Gly Lys Glu Leu Ile Ala Glu

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      195              200              205
Ala Ile His Ile Asn Ser Gln Arg Val Arg Gln Pro Phe Val Lys Val
  210              215              220
Asn Leu Gly Gly Ile Ser Gln Ser Leu Phe Glu Ser Glu Met Phe Gly
  225              230              235              240
His Lys Lys Gly Ala Phe Thr Asp Ala Thr Ala Asp Arg Met Gly Arg
      245              250              255
Phe Glu Met Ala Asn Lys Gly Thr Ile Phe Leu Asp Glu Ile Gly Asp
      260              265              270
Leu Asp Pro Ser Cys Gln Val Lys Leu Leu Arg Val Leu Gln Asp Gln
      275              280              285
Thr Phe Glu Val Leu Gly Asp Ser Arg Pro Arg Lys Thr Asp Ile Arg
      290              295              300
Val Val Ser Ala Thr Asn Ala Asp Leu Ser Lys Met Val Ser Glu His
  305              310              315              320
Thr Phe Arg Glu Asp Leu Phe Tyr Arg Ile Asn Leu Ile Thr Val Lys
      325              330              335
Leu Pro Ala Leu Arg Glu Arg Arg Glu Asp Ile Pro Leu Leu Ala Arg
      340              345              350
His Phe Ala Asp Arg Gln Ala Glu Ile Asn Asn Leu Pro Arg Thr Glu
      355              360              365
Phe Ser Ser Asp Ala Leu Asn Phe Leu Ser Arg Leu Pro Phe Pro Gly
      370              375              380
Asn Ile Arg Glu Leu Lys Asn Leu Val Glu Arg Thr Ile Leu Val Ser
  385              390              395              400
Gly Lys Glu Val Leu Asp Ala Ile Asp Phe Glu Asn Gln Tyr Gln Arg
      405              410              415
His Asp Glu Ser Val Ala Thr Ser Ser Ser Phe Ala Gly Met Thr Leu
      420              425              430
Asp Glu Ile Glu Lys Gln Thr Ile Leu Gln Ala Leu Glu Arg Tyr Lys
      435              440              445
Gly Asn Leu Ser Gln Val Ala Thr Ala Leu Gly Ile Ser Arg Ala Ala
      450              455              460
Leu Tyr Arg Arg Leu Glu Lys Tyr Asp Ile Gly Asp Lys
  465              470              475

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<210> 5772

<211> 107

<212> PRT

<213> B.fragilis

<400> 5772

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Cys Ala Asp Pro Ser Gln Pro Leu Val Lys Thr Tyr Pro Thr Phe Asp
  1              5              10              15
Thr Met Leu Gln Gln Leu Lys Asp Asn Lys Thr Lys Gln Val Thr Leu
      20              25              30
Val Pro Phe Met Phe Val Ala Gly Asp His Ala Asn Asn Asp Ile Ala
      35              40              45
Val Asp Trp Lys Glu Ala Leu Glu Lys Glu Gly Leu Lys Val Asp Val
      50              55              60
Arg Met Gln Gly Leu Gly Glu Ile Pro Ala Ile Gln Gln Leu Phe Ile
  65              70              75              80
Asp His Ala Gln Phe Met Leu Lys His Glu Met Val Asp Ile Met Lys
      85              90              95
Lys Lys Ala Lys Tyr Ala Lys Asp Lys Asp Glu
      100              105

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<210> 5773

<211> 500

<212> PRT

<213> B.fragilis

<400> 5773

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Leu His Ala Phe Arg Ile Leu Tyr Phe Ile Met Met Ile Thr Lys Phe
1      5      10      15
Met Tyr Thr Ile His Arg Val Leu Gly Thr Leu Leu Ser Ile Leu Phe
      20      25      30
Leu Val Trp Phe Leu Ser Ala Phe Val Met Met Tyr His Gly Phe Pro
      35      40      45
Arg Ala Ser Gln Ala Glu Lys Leu Glu Lys Leu Glu Pro Leu Ser Pro
      50      55      60
Ser Leu Pro Ser Val Ser Glu Ile Thr Ser Arg Leu Pro Glu Gly Glu
      65      70      75      80
Lys Val Lys Gly Ile Arg Leu Asp Arg Tyr Leu Gly Gln Thr Ile Phe
      85      90      95
His Ile Arg Thr Asp Lys Gly Glu His Asn Leu Pro Ala Asp Ser Val
      100     105     110
Gln Ala Leu Pro Val Ile Asp Gly Ser Arg Ile His Arg Val Ala Ser
      115     120     125
Leu Trp Cys Asn Ala Pro Ile Asp Arg Ile Asp Thr Leu Asn Arg Leu
      130     135     140
Asp Gln Trp Ile Pro Phe Gly Gly Leu Lys Arg Glu Phe Pro Ile Tyr
      145     150     155     160
Lys Phe His Phe Ala Asp Thr Glu Lys His Gln Leu Tyr Ile Gly Ser
      165     170     175
Gln Ser Gly Glu Val Leu Gln Phe Thr Thr Arg Asn Glu Arg Phe Trp
      180     185     190
Ala Trp Leu Gly Ala Ile Pro His Trp Val Tyr Phe Thr Trp Leu Arg
      195     200     205
Gln Asp Ala Ala Leu Trp Ser Ile Thr Val Ile Trp Leu Ser Gly Ile
      210     215     220
Gly Cys Leu Met Thr Ile Ala Gly Leu Trp Val Gly Met Asp Val Trp
      225     230     235     240
Arg Arg Ser Arg Lys Gln Lys Gly Lys Phe Ser Pro Tyr Arg Lys Lys
      245     250     255
Trp Tyr His Trp His Tyr Val Thr Gly Ile Val Phe Gly Leu Phe Val
      260     265     270
Leu Thr Phe Cys Phe Ser Gly Met Ser Leu Ala Glu Val Pro Ala
      275     280     285
Trp Ile Ser Lys Pro Val Leu Asp Arg Asn Pro Thr Arg Glu Ile Lys
      290     295     300
Lys Gly Ala Pro Lys Pro Val Gln Tyr Leu Leu Asp Tyr Arg Gln Ile
      305     310     315     320
Leu Thr Glu Tyr Pro Asp Val Arg Gln Val Glu Trp Ser Asn Phe Arg
      325     330     335
Ser Lys Pro Tyr Tyr Ile Val Lys Arg Ser Glu Gly Asp Leu Tyr Ile
      340     345     350
Asp Ala Ser Asp Ser Leu Pro His Pro Leu Asn Leu Asp Lys Lys Gln
      355     360     365
Val Thr Asp Ala Val Arg Thr Ile His Gly Asp Ser Ile His Leu Lys
      370     375     380
Val Glu Leu Ile Asp Lys Phe Glu Thr Tyr Tyr Arg Asp Met Ser Arg
      385     390     395     400
Met Tyr Arg Asp Arg Ser Leu Leu Pro Val Trp Lys Ile Thr Val Asp
      405     410     415
Asp Pro Asp His Ser Cys Tyr Tyr Ile His Pro Glu Thr Ala Thr Val
      420     425     430
Arg Tyr Val Asn Ser Thr Ala Arg Trp Lys Tyr Trp Met Tyr Thr Ala

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435 440 445
 Leu His Arg Leu Arg Ile Gln Gly Leu Asn Ser Ser Pro Thr Leu Arg
 450 455 460
 Lys Ser Val Leu Trp Val Leu Leu Leu Gly Gly Thr Val Cys Ser Leu
 465 470 475 480
 Ser Gly Val Val Leu Gly Val Arg Tyr Ile Glu Arg Lys Cys Arg Lys
 485 490 495
 Lys Thr Arg Arg
 500

<210> 5774
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 5774
 Leu Asn Thr Thr Gln Thr Met Asn Lys Lys Leu Leu Lys Gln Ile Val
 1 5 10 15
 Asn Glu Arg Arg Ser Asn Ser Trp Leu Phe Ile Glu Leu Leu Val
 20 25 30
 Ser Ile Val Leu Trp Tyr Val Val Asp Tyr Met Phe Val Thr Leu Tyr
 35 40 45
 Thr Tyr Phe Glu Pro Arg Gly Phe Asp Ile Glu Asn Thr Tyr Arg Val
 50 55 60
 Glu Phe Asp Tyr Leu Ile Glu Lys Ser Pro Asp Tyr Ile Ala Asn Arg
 65 70 75 80
 Thr Asp Glu Glu Ala His Ala Asp Met Arg Glu Leu Leu Asp Arg Leu
 85 90 95
 Arg Arg Arg Pro Gly Val Glu Ala Val Ser Met Ser Gln Asn Ser Phe
 100 105 110
 Pro Tyr Asn Gly Ser Asn Ser Gly Met Asp Val Arg Leu Asp Thr Met
 115 120 125
 Glu Ser Lys Tyr Asn Ile Arg Arg Trp Val Thr Pro Asp Phe Phe Arg
 130 135 140
 Val Phe Arg Tyr Gln Gly Ala Asn Arg Arg Asn Ser Gly Thr Ile Ser
 145 150 155 160
 Cys Ser Val Glu Gly Tyr Phe Tyr Gly Ile Ala
 165 170

<210> 5775
 <211> 347
 <212> PRT
 <213> B.fragilis

<400> 5775
 Lys Val Tyr Thr Leu Leu Cys Lys Arg Arg Leu Leu Ile Phe Gly Val
 1 5 10 15
 Asn Leu Asn Lys Met Lys Val Tyr Ile Lys Asn Ile Ser Arg Lys Lys
 20 25 30
 Gly Glu Phe Gln Phe Tyr Met His Gln Phe Val Glu Ala Cys Ile Arg
 35 40 45
 Gln Asn Ile Pro Phe Val Asn Glu Leu His Val Cys Val Arg Leu Lys
 50 55 60
 Leu Ser Ala Val Met Ile Lys Leu Gly His Trp Ile Asn Phe Phe Phe
 65 70 75 80
 Cys Arg Cys Asn Asn Lys Ala Ile Ile Val Ser Thr Trp Gly Gly Gly
 85 90 95
 Leu Met Tyr Thr Ser Phe Pro Tyr Ser Leu Leu Tyr Glu Ile Ile Pro
 100 105 110

Val Phe Trp Asp Ser Trp Pro Phe Asn Trp Glu Glu Gln Ile Tyr Ser
 115 120 125
 Leu Arg Arg Leu Asn Cys Arg Thr Cys Phe Val Thr Ser Ser Gln Val
 130 135 140
 Ala Gln Arg Ile Lys Glu Thr Leu Pro Asn Ile Asn Val His Trp Leu
 145 150 155 160
 Pro Glu Gly Ile Asp Ile Leu Asp Tyr Val Pro Gly Gln Asp Leu Thr
 165 170 175
 Glu Arg Ser Ile Glu Ile Tyr Glu Leu Gly Arg Gln Lys Ala Asp Tyr
 180 185 190
 His Lys Ile Leu Cys Asp Leu Lys Ser Glu Gly Ile Phe Ser Ser Phe
 195 200 205
 Leu Cys Asn Glu Tyr Asp Ile Asn Gly Met Thr Thr Lys Leu Ala Phe
 210 215 220
 Pro Thr Ala Lys Ala Leu Leu Lys Ala Leu Pro Asn Ile Lys Ile Val
 225 230 235 240
 Ile Ser Phe Pro Gln Val Asp Thr His Pro Glu Lys Val Gly Asn Ile
 245 250 255
 Glu Thr Leu Thr Gln Arg Tyr Trp Glu Ala Met Leu Ser Arg Asn Leu
 260 265 270
 Ile Val Gly Arg Ala Pro Asn Glu Ile Gln Leu Ile Gly Tyr Asn
 275 280 285
 Pro Val Ile Asp Val Asp Trp Glu Asp Pro Lys Lys Gln Leu Ser Asp
 290 295 300
 Ile Leu Leu Asn Ile Ser Ser Phe Gln Lys Leu Val Asp Arg Asn Tyr
 305 310 315 320
 Arg Thr Ala Arg Lys Ile Ser Ser Trp Asp Asn Arg Val Lys Asp Ile
 325 330 335
 Ile Thr Ile Leu Arg Thr Ser Gly Tyr Glu Ile
 340 345

<210> 5776

<211> 386

<212> PRT

<213> B.fragilis

<400> 5776

Arg Arg Leu Thr Arg Arg Ile Lys Arg Lys Asn Lys Met Phe Ser Asp
 1 5 10 15
 Glu Leu Glu Lys Ile Ser Trp Glu Glu Thr Thr Lys Ala Ile Tyr Ser
 20 25 30
 Lys Thr Asp Ala Asp Val Arg Arg Ala Leu Ser Lys Glu His Cys Asp
 35 40 45
 Val Asn Asp Phe Met Ala Leu Ile Ser Pro Ala Ala Ala Pro Tyr Leu
 50 55 60
 Glu Thr Met Ala Arg Leu Ser Arg Lys Tyr Thr Met Glu Arg Phe Gly
 65 70 75 80
 Lys Thr Ile Ser Met Phe Val Pro Leu Tyr Ile Thr Asn Ser Cys Thr
 85 90 95
 Asn Ser Cys Val Tyr Cys Gly Phe Asn His Asn Asn Pro Met Lys Arg
 100 105 110
 Thr Ile Leu Thr Glu Glu Glu Met Val Asn Glu Tyr Lys Ala Ile Lys
 115 120 125
 Lys Leu Ala Pro Phe Glu Asn Leu Leu Leu Val Thr Gly Glu Asn Pro
 130 135 140
 Ala Lys Ala Gly Val Asp Tyr Ile Glu Arg Ala Leu Leu Leu Ala Lys
 145 150 155 160
 Pro Tyr Phe Ala Asn Leu Gln Ile Glu Val Met Pro Leu Lys Ala Glu
 165 170 175

Glu Tyr Glu Arg Leu Thr His Ala Gly Leu Asn Gly Val Ile Cys Phe
 180 185 190
 Gln Glu Thr Tyr Asn Lys Ala Asn Tyr Asn Ile Tyr His Pro Arg Gly
 195 200 205
 Met Lys Ser Lys Phe Glu Trp Arg Val Asn Gly Phe Asp Arg Met Gly
 210 215 220
 Gln Ala Gly Val His Lys Ile Gly Met Gly Val Leu Ile Gly Leu Glu
 225 230 235 240
 Glu Trp Arg Thr Asp Ile Thr Met Met Ala Tyr His Leu Arg Tyr Leu
 245 250 255
 Gln Lys His Tyr Trp Lys Thr Lys Tyr Ser Val Asn Phe Pro Arg Met
 260 265 270
 Arg Pro Ser Glu Asn Gly Gly Phe Gln Pro Asn Val Val Met Asn Asp
 275 280 285
 Arg Glu Leu Ala Gln Val Thr Phe Ala Met Arg Ile Phe Asp His Asp
 290 295 300
 Val Asp Ile Ser Tyr Ser Thr Arg Glu Ser Ala Ala Phe Arg Asn His
 305 310 315 320
 Met Ala Thr Leu Gly Val Thr Thr Met Ser Ala Glu Ser Lys Thr Glu
 325 330 335
 Pro Gly Gly Tyr Phe Thr Tyr Pro Gln Ala Leu Glu Gln Phe His Val
 340 345 350
 Ser Asp Glu Arg Lys Ala Val Glu Val Asp Ala Ala Leu Arg Ser Leu
 355 360 365
 Gly Arg Ile Pro Val Tyr Lys Asp Trp Asp Thr Ala Leu Thr Leu Pro
 370 375 380
 Gln Cys
 385

<210> 5777

<211> 555

<212> PRT

<213> B.fragilis

<400> 5777

Leu Asn Ile Thr Leu Asp Ile Met Met Lys Ser Asn Glu Asn Asn Gly
 1 5 10 15
 Ala Val Thr Lys Ser Phe Ala Lys Lys Met Glu Ser Ile Ser Pro Phe
 20 25 30
 Glu Leu Lys Asn Lys Leu Ile Glu Met Ala Asp Glu Ser Ile Lys Lys
 35 40 45
 Ile Ala His Thr Met Leu Asn Ala Gly Arg Gly Asn Pro Asn Trp Ile
 50 55 60
 Ala Thr Thr Pro Arg Glu Ala Phe Phe Leu Leu Gly Lys Phe Gly Leu
 65 70 75 80
 Glu Glu Cys Arg Arg Val Met Tyr Leu Pro Glu Gly Ile Ala Gly Ile
 85 90 95
 Pro Gln Lys Asp Gly Ile Ala Ala Arg Phe Glu Thr Phe Leu Lys Thr
 100 105 110
 Asn His Ser Gln Pro Gly Ala Glu Leu Leu Lys Gly Thr Tyr Gln Tyr
 115 120 125
 Met Leu Leu Glu His Ala Ala Asp Pro Asp Thr Leu Val His Glu Trp
 130 135 140
 Ala Glu Gly Val Val Gly Asp Gln Tyr Pro Val Pro Asp Arg Ile Leu
 145 150 155 160
 Gln Phe Thr Glu Met Ile Val Gln Asp Tyr Leu Ala Gln Glu Met Cys
 165 170 175
 Asp Arg Arg Pro Pro Lys Gly Lys Tyr Asp Leu Phe Ala Thr Glu Gly
 180 185 190

Gly Thr Ala Ala Met Cys Tyr Val Phe Asp Ser Leu Gln Glu Asn Phe
 195 200 205
 Leu Leu Asn Lys Gly Asp Gly Ile Ala Leu Met Val Pro Val Phe Thr
 210 215 220
 Pro Tyr Ile Glu Ile Pro Gln Leu Arg Arg Tyr Glu Phe Asn Val Thr
 225 230 235 240
 Glu Ile Ser Ala Asp Gln Met Thr Thr Asp Gly Leu His Thr Trp Gln
 245 250 255
 Tyr Lys Asp Glu Asp Ile Asp Arg Leu Arg Asn Pro Gln Ile Lys Ala
 260 265 270
 Leu Phe Ile Thr Asn Pro Ser Asn Pro Pro Ser Tyr Thr Leu Asn Pro
 275 280 285
 Glu Thr Ala Ala Arg Ile Val Asp Ile Val Lys Lys Asp Asn Pro Asn
 290 295 300
 Leu Met Ile Ile Thr Asp Asp Val Tyr Gly Thr Phe Ser Pro His Phe
 305 310 315 320
 Arg Ser Leu Met Ala Glu Leu Pro Gln Asn Thr Leu Cys Val Tyr Ser
 325 330 335
 Phe Ser Lys Tyr Phe Gly Ala Thr Gly Trp Arg Asp Ala Val Ile Ala
 340 345 350
 Leu His Glu Glu Asn Ile Phe Asp Arg Met Ile Ala His Leu Pro Glu
 355 360 365
 Glu Gln Lys Thr Ile Leu Asn Lys Arg Tyr Ser Ser Leu Thr Leu Thr
 370 375 380
 Pro Glu Lys Leu Lys Phe Ile Asp Arg Met Val Ala Asp Ser Arg Gln
 385 390 395 400
 Val Ala Leu Asn His Thr Ala Gly Leu Ser Leu Pro Gln Gln Thr Gln
 405 410 415
 Met Ser Leu Phe Ala Ser Phe Ala Ile Leu Asp Lys Glu Asn Arg Tyr
 420 425 430
 Lys Asn Lys Met Gln Glu Ile Ile Arg Arg Arg Leu Lys Ala Leu Trp
 435 440 445
 Asp Asn Thr Gly Phe Ser Leu Val Asp Asp Pro Leu Arg Val Gly Tyr
 450 455 460
 Tyr Ser Glu Ile Asp Met Leu Val Trp Ala Lys Ile Phe Tyr Gly Glu
 465 470 475 480
 Glu Phe Val Ser Tyr Leu Lys Lys Thr Tyr Ser Pro Leu Asp Val Val
 485 490 495
 Phe Arg Leu Ala Asn Glu Thr Ser Leu Val Leu Leu Asn Gly Gly Gly
 500 505 510
 Phe Ala Gly Pro Glu Trp Ser Val Arg Val Ser Leu Ala Asn Leu Asn
 515 520 525
 Glu Lys Asp Tyr Val Lys Ile Gly Gln Gly Ile Lys Arg Ile Leu Asp
 530 535 540
 Glu Tyr Ala Val Lys Trp Gln Glu Ser Arg Lys
 545 550 555

<210> 5778

<211> 595

<212> PRT

<213> B.fragilis

<400> 5778

Thr Asn Lys Thr Ile Thr Ser Pro Pro Ala Pro Leu Pro Ser Ile Thr
 1 5 10 15
 Leu Arg Glu Lys Asn Thr Gly Leu Arg Asp Pro Asn Asn Glu Cys Met
 20 25 30
 Glu Gln Arg Ile Lys Phe Pro Arg Ser Glu Lys Val Tyr Leu Ser Gly
 35 40 45

Lys Leu Phe Pro Glu Ile Arg Val Gly Met Arg Lys Val Glu Gln Val
 50 55 60
 Pro Ser Thr Thr Phe Glu Gly Glu Lys Lys Val Ile Thr Pro Asn Pro
 65 70 75 80
 His Val Tyr Ile Tyr Asp Thr Ser Gly Pro Phe Ser Asp Pro Asp Ile
 85 90 95
 Glu Ile Asp Leu Lys Lys Gly Leu Pro Arg Leu Arg Glu Glu Trp Ile
 100 105 110
 Leu Asn Arg Gly Asp Val Glu Gln Leu Pro Glu Ile Ser Ser Glu Tyr
 115 120 125
 Gly Arg Met Arg Arg Asp Asp Gly Ser Leu Asp His Leu Arg Phe Glu
 130 135 140
 His Ile Ala Leu Pro Tyr Arg Ala Lys Ala Gly Arg His Ile Thr Gln
 145 150 155 160
 Met Ala Tyr Ala Lys Gln Gly Ile Val Thr Pro Glu Met Glu Tyr Val
 165 170 175
 Ala Ile Arg Glu Asn Met Asn Cys Glu Glu Leu Gly Ile Glu Thr His
 180 185 190
 Ile Thr Pro Glu Phe Val Arg Gln Glu Ile Ala Glu Gly Arg Ala Val
 195 200 205
 Leu Pro Ala Asn Ile Asn His Pro Glu Ala Glu Pro Met Ile Ile Gly
 210 215 220
 Arg Asn Phe Leu Val Lys Ile Asn Thr Asn Ile Gly Asn Ser Ala Thr
 225 230 235 240
 Thr Ser Ser Ile Asp Glu Glu Val Glu Lys Ala Met Trp Ser Cys Lys
 245 250 255
 Trp Gly Gly Asp Thr Leu Met Asp Leu Ser Thr Gly Glu Asn Ile His
 260 265 270
 Glu Thr Arg Glu Trp Ile Ile Arg Asn Cys Pro Val Pro Val Gly Thr
 275 280 285
 Val Pro Ile Tyr Gln Ala Leu Glu Lys Val Asn Gly Lys Val Glu Asp
 290 295 300
 Leu Thr Trp Glu Leu Tyr Arg Asp Thr Leu Ile Glu Gln Cys Glu Gln
 305 310 315 320
 Gly Val Asp Tyr Phe Thr Ile His Ala Gly Ile Arg Arg His Asn Val
 325 330 335
 His Leu Ala Glu Lys Arg Leu Cys Gly Ile Val Ser Arg Gly Gly Ser
 340 345 350
 Ile Met Ser Lys Trp Cys Leu Val His Asp Arg Glu Ser Phe Leu Tyr
 355 360 365
 Glu His Phe Asp Asp Ile Cys Asp Ile Leu Ala Gln Tyr Asp Val Ala
 370 375 380
 Val Ser Leu Gly Asp Gly Leu Arg Pro Gly Ser Thr His Asp Ala Asn
 385 390 395 400
 Asp Glu Ala Gln Phe Ala Glu Leu Asp Thr Met Gly Glu Leu Val Val
 405 410 415
 Arg Ala Trp Glu Lys Asn Val Gln Ala Phe Ile Glu Gly Pro Gly His
 420 425 430
 Val Pro Met His Lys Ile Arg Glu Asn Met Glu Arg Gln Ile Glu Lys
 435 440 445
 Cys His Asn Ala Pro Phe Tyr Thr Leu Gly Pro Leu Val Thr Asp Ile
 450 455 460
 Ala Pro Gly Tyr Asp His Ile Thr Ser Ala Ile Gly Ala Ala Gln Ile
 465 470 475 480
 Gly Trp Leu Gly Thr Ala Met Leu Cys Tyr Val Thr Pro Lys Glu His
 485 490 495
 Leu Ala Leu Pro Asp Lys Glu Asp Val Arg Val Gly Val Ile Thr Tyr
 500 505 510
 Lys Ile Ala Ala His Ala Ala Asp Leu Ala Lys Gly His Pro Gly Ala

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<210> 5779
<211> 257
<212> PRT
<213> B.fragilis
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<210> 5780
<211> 155
<212> PRT
<213> B.fragilis
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Gln Ala Arg Thr Leu Phe Gly Ser Leu Leu Thr Thr Ile Phe Ala Gln
 1 5 10 15
 Tyr Ser His Ile Lys Lys Ile Lys Gln Met Lys Lys Ile Ile Leu Gly
 20 25 30
 Ala Cys Ala Val Leu Phe Thr Leu Ala Ser Cys Gln Gln Ala Lys Gln
 35 40 45
 Lys Val Phe Glu Leu Ala Ala Glu Gln Val Asn Lys Gln Cys Pro Ile
 50 55 60
 Thr Val Asp Glu Met Thr Arg Met Asp Ser Thr Thr Tyr Ser Gly Lys
 65 70 75 80
 Asp Asn Thr Phe Thr Tyr Phe Tyr Thr Leu Ser Gly Gln Ala Asp Asp
 85 90 95
 Pro Thr Met Ser Glu Gln Leu Lys Lys Ser Leu Glu Glu Thr Leu Pro
 100 105 110
 Glu Thr Ile Lys Asn Thr Glu Glu Met Lys Val Tyr Arg Glu Ser Asp
 115 120 125
 Val Thr Ile Lys Tyr Ile Tyr Leu Ser Gly Lys Thr Lys Glu Glu Leu
 130 135 140
 Ile Gln Val Thr Val Thr Pro Asp Met Tyr Lys
 145 150 155

<210> 5781

<211> 408

<212> PRT

<213> B.fragilis

<400> 5781

Met Glu Leu Thr Leu Leu Leu Ile Ile Ala Ala Leu Leu Val Ala Leu
 1 5 10 15
 Leu Val Leu Thr Leu Thr Arg Asn Asn Arg Ala Gln Ser Glu Glu Met
 20 25 30
 Gln Arg Ala Leu Arg Gln Gln Met Gln Glu Asn Arg Glu Glu Leu Asn
 35 40 45
 Arg Ser Ile Arg Glu Leu Arg Met Glu Met Thr Gln Thr Leu Asn Gln
 50 55 60
 Gly Leu Gln Gln Leu Gln Asp Ala Met His Lys Asn Met Met Thr Thr
 65 70 75 80
 Gly Glu Leu Gln Arg Gln Lys Phe Asp Ala Met Ala Arg Gln Gln Glu
 85 90 95
 Thr Leu Ile Gln Ser Thr Glu Lys Arg Leu Asp Asp Met Arg Val Met
 100 105 110
 Val Glu Glu Lys Leu Gln Lys Thr Leu Asn Glu Arg Ile Gly Gln Ser
 115 120 125
 Phe Glu Ile Val Arg Ser Gln Leu Glu Asn Val Gln Lys Gly Leu Gly
 130 135 140
 Glu Met Lys Ser Leu Ala Gln Asp Val Gly Gly Leu Lys Lys Val Leu
 145 150 155 160
 Ser Asn Val Lys Met Arg Gly Thr Phe Gly Glu Val Gln Leu Gly Ala
 165 170 175
 Leu Leu Glu Gln Met Met Ser Pro Glu Gln Tyr Glu Ala Asn Val Lys
 180 185 190
 Thr Lys Lys Ser Gly Thr Glu Phe Val Glu Phe Ala Ile Lys Leu Pro
 195 200 205
 Gly Lys Asp Asp Ala Asn Ser Thr Val Tyr Leu Pro Ile Asp Ala Lys
 210 215 220
 Phe Pro Lys Asp Val Tyr Glu Gln Tyr Tyr Asp Ala Phe Glu Ala Gly
 225 230 235 240
 Asp Ala Ala Leu Met Glu Ser Cys Gly Arg Gln Leu Glu Thr Thr Ile
 245 250 255

Lys Lys Met Ala Lys Asp Ile His Asp Lys Tyr Val Asp Pro Pro Phe
 260 265 270
 Thr Thr Asp Phe Ala Ile Leu Phe Leu Pro Phe Glu Ser Ile Tyr Ala
 275 280 285
 Glu Val Ile Arg Arg Thr Ser Leu Val Glu Thr Leu Gln Lys Asp Tyr
 290 295 300
 Lys Ile Val Val Thr Gly Pro Thr Thr Leu Gly Ala Ile Leu Asn Ser
 305 310 315 320
 Leu Gln Met Gly Phe Arg Thr Leu Ala Ile Gln Lys Arg Thr Gly Glu
 325 330 335
 Val Trp Thr Val Leu Gly Ala Val Lys Thr Glu Phe Gly Lys Phe Gly
 340 345 350
 Gly Leu Leu Glu Lys Val Gln Lys Asn Leu Gln Ser Ala Gly Asp Gln
 355 360 365
 Leu Glu Glu Val Met Gly Lys Arg Thr Arg Ala Ile Glu Arg Lys Leu
 370 375 380
 Arg Gln Val Glu Glu Leu Pro His Glu Glu Ser Arg Arg Ile Leu Pro
 385 390 395 400
 Ile Asp Asp Gly Gly Glu Asp Asp
 405

<210> 5782

<211> 140

<212> PRT

<213> B.fragilis

<400> 5782

Cys Asn Val Ala Lys Asn Ala Met Ile Leu Gly Ala Lys Arg Leu Val
 1 5 10 15
 Val Thr Ile Tyr Ile Gln Tyr His Leu Cys Leu Lys Tyr Glu Phe Ala
 20 25 30
 Leu Val Arg Val Lys Glu Leu Leu Pro Leu Val Asp Asp Asn Ile Pro
 35 40 45
 Ala Asn Asp Lys Asp Ala Val Glu Leu Ser Val Met Ser Asp Ile Val
 50 55 60
 Ile Ala Tyr Gly Lys Glu His Tyr Pro Ile Glu Lys Pro Thr Val Ala
 65 70 75 80
 Glu Leu Ile Glu Leu Tyr Leu Glu Glu Lys Gly Met Ser Gln Lys Gln
 85 90 95
 Leu Ala Ile Glu Ile Gly Ile Ser Leu Ser Arg Val Asn Asp Tyr Ile
 100 105 110
 Ala Gly Arg Ser Glu Pro Thr Leu Lys Ile Ala Arg Leu Leu Cys Arg
 115 120 125
 Ile Leu Asn Ile Pro Pro Val Ala Met Leu Gly Phe
 130 135 140

<210> 5783

<211> 251

<212> PRT

<213> B.fragilis

<400> 5783

Gly Lys Tyr Phe Lys Pro Met Gly Arg Ala Phe Glu Tyr Arg Lys Ala
 1 5 10 15
 Thr Lys Leu Lys Arg Trp Gly Asn Met Ala Arg Thr Phe Thr Arg Ile
 20 25 30
 Gly Lys Gln Ile Ala Ile Ala Val Lys Ala Gly Gly Pro Asp Pro Glu
 35 40 45
 Asn Asn Pro His Leu Arg Ala Val Val Ala Thr Ala Lys Arg Glu Asn

50	55	60
Met Pro Lys Asp Asn Val Glu Arg Ala Ile Lys Asn Ala Met Gly Lys		
65	70	75
Asp Gln Lys Asp Tyr Lys Glu Met Asn Tyr Glu Gly Tyr Gly Pro Phe		80
	85	90
Gly Ile Ala Val Phe Val Glu Thr Ala Thr Asp Asn Thr Thr Arg Thr		95
	100	105
Val Ala Asn Val Arg Ser Val Phe Asn Lys Phe Gly Gly Thr Leu Gly		110
	115	120
Thr Ser Gly Ser Leu Asp Phe Met Phe Ser Trp Lys Ser Met Phe Thr		125
	130	135
Ile Thr Lys Lys Glu Gly Val Asp Met Asp Asp Leu Ile Leu Glu Leu		140
145	150	155
Ile Asp Tyr Gly Val Glu Glu Glu Tyr Asp Glu Asp Glu Asp Glu Ile		160
	165	170
Thr Leu Tyr Gly Asp Pro Lys Ser Phe Ala Gln Ile Gln Lys Tyr Leu		175
	180	185
Glu Glu Asn Gly Phe Glu Val Lys Gly Ala Glu Phe Thr Arg Ile Pro		190
	195	200
Asn Asp Glu Lys Asp Leu Thr Pro Glu Gln Arg Ala Thr Ile Asp Lys		205
210	215	220
Met Val Glu Arg Leu Glu Asp Glu Asp Val Gln Asn Val Tyr Thr		225
225	230	235
Asn Met Lys Pro Ala Asp Asn Glu Gly Glu Glu		240
	245	250

<210> 5784

<211> 790

<212> PRT

<213> B.fragilis

<400> 5784

Gln Ile Asn Phe Met Pro Asp Tyr Ile Glu Glu Leu Asn Glu Ser Gln		
1	5	10
Arg Ala Ala Val Leu Tyr Gly Asp Gly Pro Ser Leu Val Ile Ala Gly		15
	20	25
Ala Gly Ser Gly Lys Thr Arg Val Leu Thr Tyr Lys Ile Ala Tyr Leu		30
	35	40
Leu Glu Asn Gly Tyr Asn Pro Trp Asn Ile Leu Ala Leu Thr Phe Thr		45
	50	55
Asn Lys Ala Ala Arg Glu Met Lys Glu Arg Ile Ala Arg Gln Val Gly		60
65	70	75
Glu Gln Arg Ala Arg Phe Leu Trp Met Gly Thr Phe His Ser Val Phe		80
	85	90
Ser Arg Ile Leu Arg Ala Glu Ala Ser His Ile Gly Phe Thr Ser Gln		95
	100	105
Phe Thr Ile Tyr Asp Ser Ala Asp Ser Lys Ser Leu Ile Arg Ser Ile		110
	115	120
Ile Lys Glu Met Gly Leu Asp Glu Lys Thr Tyr Lys Pro Gly Ser Val		125
	130	135
Gln Ala Arg Ile Ser Asn Ala Lys Asn His Leu Val Ser Pro Ser Gly		140
145	150	155
Tyr Ala Ala Asn Lys Glu Ala Tyr Glu Gly Asp Leu Ala Ala Lys Met		160
	165	170
Pro Ala Ile Arg Asp Ile Tyr Ser Arg Tyr Trp Glu Arg Cys Arg Gln		175
	180	185
Ala Gly Ala Met Asp Phe Asp Asp Leu Leu Val Tyr Thr Tyr Ile Leu		190
	195	200
Phe Arg Asp Phe Pro Asp Val Leu Ala Arg Tyr Arg Glu Gln Phe Arg		205

	210					215					220					
Tyr 225	Val	Leu	Val	Asp	Glu 230	Tyr	Gln	Asp	Thr	Asn 235	Tyr	Ala	Gln	His 240	Ser	
Ile	Val	Leu	Gln	Leu 245	Thr	Lys	Glu	Asn	Gln	Arg 250	Val	Cys	Val	Val 255	Gly	
Asp	Asp	Ala	Gln	Ser 260	Ile	Tyr	Ser	Phe	Arg	Gly 265	Ala	Asp	Ile	Asp 270	Asn	
Ile	Leu	Tyr	Phe	Thr 275	Lys	Ile	Tyr	Pro	Asp	Thr 280	Lys	Val	Phe	Lys 285	Leu	
Glu	Gln	Asn	Tyr	Arg 290	Ser	Thr	Gln	Thr	Ile	Val 300	Arg	Ala	Ala	Asn 305	Ser	
Leu 305	Ile	Glu	Lys	Asn 310	Glu	Arg	Gln	Ile	Pro	Lys 315	Glu	Val	Phe	Ser 320	Glu	
Lys	Glu	Arg	Gly	Glu 325	Ala	Ile	Gly	Val	Phe	Gln 330	Ala	Tyr	Ser	Asp 335	Val	
Glu	Glu	Gly	Asp 340	Ile	Val	Thr	Asn	Lys	Ile	Ala 345	Gln	Leu	Arg	Arg 350	Glu	
His	Asp	Tyr	Glu	Tyr 355	Ser	Asp	Phe	Ala	Ile	Leu 360	Tyr	Arg	Thr	Asn 365	Ala	
Gln	Ser	Arg	Val	Phe 370	Glu	Glu	Ala	Leu	Arg	Lys 375	Arg	Gly	Met	Pro 380	Tyr	
Lys 385	Ile	Tyr	Gly	Gly 390	Leu	Ser	Phe	Tyr	Gln	Arg 395	Lys	Glu	Ile	Lys 400	Asp	
Ile	Ile	Ala	Tyr	Phe 405	Arg	Leu	Val	Val	Asn	Pro 410	Asn	Asp	Glu	Glu 415	Ala	
Phe	Lys	Arg	Ile 420	Ile	Asn	Tyr	Pro	Ala	Arg	Gly 425	Ile	Gly	Asp	Thr 430	Thr	
Val	Gly	Lys 435	Ile	Ile	Thr	Ala	Ala	Thr	Asp	Asn 440	Asn	Val	Ser	Leu 445	Trp	
Thr	Ala	Leu 450	Cys	Glu	Pro	Ile	Thr	Tyr	Gly	Leu 455	Ser	Ile	Asn	Lys 460	Gly	
Thr 465	His	Thr	Lys	Leu 470	Gln	Asp	Phe	Arg	Ala	Leu 475	Ile	Glu	Gln	Phe 480	Met	
Ala	Asp	Val	Thr 485	Val	Lys	Asn	Ala	Tyr	Glu	Ile 490	Gly	Thr	Glu	Ile 495	Ile	
Arg	Gln	Ser	Gly 500	Ile	Ile	Asn	Glu	Val	Cys	Gln 505	Asp	Asn	Ser	Pro 510	Glu	
Asn	Leu	Ser 515	Arg	Lys	Glu	Asn	Ile	Glu	Glu	Leu 520	Val	Asn	Gly	Met 525	Asn	
Asp	Phe 530	Cys	Ala	Met	Arg	Gln 535	Glu	Glu	Gly	Asn 540	Thr	Asn	Val	Ser 545	Leu	
Ile 545	Asp	Phe	Leu	Ser 550	Glu	Val	Ser	Leu	Leu	Thr 555	Asp	Gln	Asp	Ser 560	Asp	
Lys	Glu	Gly	Asp 565	Gly	Glu	Lys	Val	Thr	Leu	Met 570	Thr	Val	His	Ser 575	Ala	
Lys	Gly	Leu	Glu 580	Phe	Arg	Asn	Val	Phe	Val	Val 585	Gly	Met	Glu	Glu 590	Asn	
Leu	Phe 595	Pro	Ser	Gly	Met	Ala	Gly 600	Asp	Ser	Pro	Arg	Ala	Met	Glu 605	Glu	
Glu	Arg 610	Arg	Leu	Phe	Tyr	Val 615	Ala	Ile	Thr	Arg	Ala	Glu	Glu	His 620	Cys	
Phe 625	Leu	Ser	Phe	Ala 630	Lys	Thr	Arg	Phe	Arg	Tyr 635	Gly	Lys	Met	Glu 640	Phe	
Gly	Ser	Pro	Ser 645	Arg	Phe	Leu	Arg	Asp	Ile 650	Asp	Thr	Arg	Phe	Leu 655	Gln	
Leu	Pro	Gln	Glu 660	Ala	Ala	Leu	Gly	Arg	Ser	Val 665	Asp	Glu	Gly	Ala 670	Gly	
Arg	Phe 675	Arg	Arg	Glu	Met	Glu	Glu 680	Gly	Tyr	Ser	Arg	Arg	Ser	Ser 685	Ser	

Glu Arg Phe Ser Ala Arg Pro Ser Ala Asp Arg Pro Glu Arg Glu Arg
 690 695 700
 Pro Lys Ala Gln Ile Ile Ala Pro Thr Val Pro Arg Asn Leu Lys Lys
 705 710 715 720
 Val Ser Gly Thr Thr Leu Ser Pro Ser Ser Ala Ser Gly Ala Gly Val
 725 730 735
 Ala Gly Val Gln Pro Gly Gln Thr Ile Glu His Glu Arg Phe Gly Leu
 740 745 750
 Gly Glu Val Ile Arg Val Glu Gly Thr Gly Asp Asn Ala Lys Ala Thr
 755 760 765
 Ile His Phe Arg Asn Ala Gly Asp Lys Gln Leu Leu Leu Arg Phe Ala
 770 775 780
 Arg Phe Lys Val Ile Glu
 785 790

<210> 5785

<211> 72

<212> PRT

<213> B.fragilis

<400> 5785

Leu Lys Phe Leu Lys Gln Met Leu Lys Glu Lys Ala Gly Glu Ile Ala
 1 5 10 15
 Gly Lys Ile Trp Asn Ala Leu Asn Gly Thr Glu Gly Leu Thr Ala Lys
 20 25 30
 Gln Ile Lys Lys Ala Thr Lys Leu Val Asp Lys Asp Leu Phe Leu Gly
 35 40 45
 Leu Gly Trp Leu Leu Arg Glu Asp Lys Ile Ser Thr Gln Glu Ile Glu
 50 55 60
 Gly Glu Leu Phe Val Thr Leu Asn
 65 70

<210> 5786

<211> 442

<212> PRT

<213> B.fragilis

<400> 5786

Val Ser Tyr Tyr Leu Asp Gln Tyr Val Phe Tyr Met Ile Phe Phe Lys
 1 5 10 15
 Val Lys Thr Arg Asn Leu Val Phe Ser Phe Ile Leu Leu Ser Leu Leu
 20 25 30
 Ile Val Ser Asp Leu Leu Leu Phe Thr Arg Tyr Ser Asn Trp Gly Ile
 35 40 45
 Lys Thr Asp Ser Ile Trp Leu Phe Ile Ala Ile Ile Asp Val Val Leu
 50 55 60
 Leu Phe Met Leu Ile Ser Phe Phe Arg Phe Lys Arg Ile Val Asn Pro
 65 70 75 80
 Ser Ser Val Tyr Leu Val Phe Val Gly Leu Phe Ala Tyr Ser Val Leu
 85 90 95
 Pro Leu Ser Glu Asn Ile Arg Phe Ser Asn Glu Leu Leu Leu Ile Ile
 100 105 110
 Leu Cys Gly Val Ala Ala Tyr Phe Val Gly Val Phe Cys Leu Pro Gln
 115 120 125
 Ile His Ile Ile Thr Phe Pro Val Phe Thr Asn Arg Thr Lys Arg Ile
 130 135 140
 Phe Tyr Tyr Ile Leu Cys Val Leu Thr Phe Ser Cys Phe Ile Tyr Glu
 145 150 155 160
 Ile Lys Asn Val Gly Tyr Ile Pro Val Phe Val Ile Gly Gln Ser Leu

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      165      170      175
Asp Ile Tyr Gly Glu Val Gly Glu Ser Asn Ser Val Leu His Thr Phe
      180      185      190
Val Leu Leu Thr Pro Ile Leu Phe Tyr Trp Ser Leu Ile Leu Ala Lys
      195      200      205
Glu Gly Ile Ile Gln Thr Arg Ile Arg Asn Cys Ile Val Ser Phe Leu
      210      215      220
Leu Phe Val Phe Val Asn Asn Phe Gly Arg Thr Ser Leu Leu Met Phe
      225      230      235      240
Ile Ile Thr Gly Leu Ile Tyr Leu Glu Phe Tyr Thr Lys Leu Ser Val
      245      250      255
Ser Lys Phe Ile Ser Ile Ile Phe Leu Phe Ile Ser Leu Phe Ile Ile
      260      265      270
Met Gly Asn Val Arg Ser Gly Ser Thr Phe Asp Gly Ile Asn Lys Val
      275      280      285
Leu Arg Arg Ile Gly Asn Thr Gln Tyr Glu Thr Ser Ile Leu Glu Ser
      290      295      300
Tyr Leu Ile Ser Tyr Ser Ser Val Asn Phe Tyr Lys Met Asn Asp Val
      305      310      315      320
Ile Gln Leu Lys Glu Val Leu Asn Tyr Ser Ser Asn Gly Arg Asn Ser
      325      330      335
Leu Lys Pro Ile Val Lys Leu Leu Ser Ile Ser Glu Pro Leu Asp Asn
      340      345      350
Val Ala Glu Phe Gln Thr Gln Gln Asn Leu Ser Thr Tyr Ile Ala Asp
      355      360      365
Pro Tyr Leu Asp Phe Gly Tyr Ala Gly Val Val Val Leu Asn Cys Leu
      370      375      380
Tyr Gly Met Ile Ala Val Met Leu Phe Glu Arg Tyr Glu Lys Lys Asn
      385      390      395      400
Cys Pro Glu Tyr Ile Ile Ser Trp Gly Val Val Val Phe Cys Ile Leu
      405      410      415
Met Gly Cys Phe Phe Asn Ala Phe Asn Thr Met Leu Val Trp Val Ile
      420      425      430
Tyr Ile Cys Asn Lys Ile Leu Leu Lys Arg
      435      440

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<210> 5787

<211> 451

<212> PRT

<213> B.fragilis

<400> 5787

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Thr Ile His Tyr Met Ser Lys Lys Glu Thr Leu Lys Gln Gln Ile Leu
1      5      10      15
Asp Leu Thr Arg Glu Tyr Tyr Lys Glu Val His Gly Ser Ser Arg Ser
      20      25      30
Phe Glu Pro Gly Lys Ser Phe Val Asn Tyr Gly Gly Arg Tyr Phe Asp
      35      40      45
Asp Arg Glu Leu Val Asn Leu Val Asp Ser Ser Leu Asp Phe Trp Leu
      50      55      60
Thr Ala Gly Pro Trp Ala Arg Lys Phe Glu Ile Arg Phe Ala Glu Trp
      65      70      75      80
Leu Gly Val Lys Tyr Cys Ser Leu Thr Asn Ser Gly Ser Ser Ala Asn
      85      90      95
Leu Leu Ala Phe Met Ala Leu Thr Ser Pro Gln Leu Gly Glu Arg Arg
      100      105      110
Ile Arg Arg Gly Asp Glu Val Ile Thr Val Ala Cys Gly Phe Pro Thr
      115      120      125
Thr Val Thr Pro Cys Ile Gln Tyr Gly Ala Val Pro Val Phe Val Asp

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      130              135              140
Val Thr Ile Pro Glu Tyr Asn Ile Asp Val Thr Gln Leu Glu Ala Ala
145              150              155              160
Leu Ser Pro Lys Thr Lys Ala Val Met Ile Ala His Ser Leu Gly Asn
      165              170              175
Pro Phe Asp Leu Gln Ala Val Lys Asp Phe Cys Asp Lys His Asn Leu
      180              185              190
Trp Leu Val Glu Asp Asn Cys Asp Ala Leu Gly Ser Thr Tyr Thr Ile
      195              200              205
Asp Gly Val Glu Lys Lys Thr Gly Thr Ile Gly His Ile Gly Thr Ser
      210              215              220
Ser Phe Tyr Pro Pro His His Met Thr Met Gly Glu Gly Gly Ala Val
225              230              235              240
Tyr Thr Asp Asp Pro Leu Leu His Lys Leu Val Asn Ser Phe Arg Asp
      245              250              255
Trp Gly Arg Asp Cys Trp Cys Ile Gly Gly Val Asp Asn Thr Cys Lys
      260              265              270
Tyr Arg Phe Ser Lys Gln Phe Gly Asp Leu Pro Val Gly Tyr Asp His
      275              280              285
Lys Tyr Val Tyr Ser His Phe Gly Tyr Asn Leu Lys Val Thr Asp Met
      290              295              300
Gln Ala Ala Ile Gly Cys Ala Gln Leu Glu Lys Leu Asp Ser Ile Val
305              310              315              320
Glu Ala Arg Arg Ser Asn Phe Ala Tyr Leu Lys Glu Gly Leu Ala Gly
      325              330              335
Thr Ser Gly Leu Ile Leu Pro Glu Ala Gln Lys Asn Ser Asp Pro Ser
      340              345              350
Trp Phe Gly Phe Leu Ile Ser Val Lys Glu Asp Ala Gly Phe Thr Arg
      355              360              365
Asn Asp Leu Ser Gln His Leu Glu Ser Arg Lys Ile Gln Thr Arg Asn
      370              375              380
Leu Phe Ala Gly Asn Leu Leu Lys His Pro Ala Phe Asp Glu Met Arg
385              390              395              400
Ser Thr Gly Glu Gly Tyr Arg Val Ile Gly Asn Leu Glu Gly Thr Asp
      405              410              415
Tyr Val Met Asn His Thr Leu Trp Ile Gly Val Tyr Pro Gly Met Thr
      420              425              430
Arg Ala Met Leu Asp His Met Ile Gly Thr Ile Arg Asp Phe Val Ser
      435              440              445
Ser Arg Lys
450

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<210> 5788

<211> 300

<212> PRT

<213> B.fragilis

<400> 5788

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Arg Glu His Tyr Leu Met Tyr Val Lys Lys Arg Asn Asn His Phe Lys
1      5      10      15
Ile Tyr Asn Leu Met Glu Gln Arg Thr Tyr Leu Pro Leu Val Ser Val
      20      25      30
Ile Thr Val Cys Tyr Asn Ala Thr Thr Val Ile Glu Ala Thr Ile Leu
      35      40      45
Ser Ile Ile Gly Gln Thr Tyr Ser Asn Ile Glu Tyr Ile Ile Ile Asp
      50      55      60
Gly Gly Ser Thr Asp Gly Thr Ile Glu Val Ile Lys Lys Tyr Glu Lys
65      70      75      80
Lys Ile Ser Tyr Trp Val Ser Glu Pro Asp Lys Gly Ile Tyr Asp Ala

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<210> 5789
<211> 318
<212> PRT
<213> B.fragilis
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Leu	Met	Tyr	Tyr	Leu	Ile	Ile	Leu	Val	Leu	Leu	Phe	Leu	Ala	Glu	Leu
1				5					10					15	
Phe	Tyr	Phe	Arg	Ile	Ala	Asp	Lys	Cys	Asn	Ile	Ile	Asp	Lys	Pro	Asn
			20					25					30		
Glu	Arg	Ser	Ser	His	Thr	Arg	Ile	Thr	Leu	Arg	Gly	Gly	Gly	Ile	Ile
		35					40					45			
Phe	Tyr	Leu	Gly	Ala	Leu	Ala	Tyr	Phe	Leu	Thr	Asn	Gln	Phe	Glu	Tyr
	50					55					60				
Pro	Trp	Phe	Met	Leu	Ala	Leu	Thr	Leu	Ile	Thr	Phe	Ile	Ser	Phe	Val
65					70					75					80
Asp	Asp	Ile	Arg	Ser	Thr	Ser	Gln	Gly	Leu	Arg	Leu	Val	Phe	His	Phe
			85					90					95		
Thr	Ala	Met	Ala	Leu	Met	Phe	Tyr	Gln	Trp	Gly	Leu	Phe	Asn	Leu	Pro
			100					105					110		
Trp	Trp	Thr	Ile	Leu	Val	Ala	Leu	Ile	Val	Cys	Thr	Gly	Ile	Ile	Asn
		115					120					125			
Ala	Tyr	Asn	Phe	Met	Asp	Gly	Ile	Asn	Gly	Ile	Thr	Gly	Gly	Tyr	Ser
	130					135					140				
Trp	Val	Val	Leu	Leu	Ala	Leu	Ala	Phe	Ile	Asn	Val	Gln	Ile	Val	Arg
145					150					155					160
Phe	Val	Glu	Glu	Asp	Leu	Ile	Tyr	Thr	Met	Leu	Cys	Ala	Val	Leu	Val
				165					170					175	
Phe	Asn	Phe	Phe	Asn	Phe	Arg	Lys	Lys	Ala	Lys	Cys	Phe	Ala	Gly	Asp
			180					185					190		
Val	Gly	Ser	Val	Ser	Ile	Ala	Phe	Val	Ile	Leu	Phe	Leu	Ile	Gly	Lys

195	200	205
Leu Ile Ile Arg Thr Glu Asn Phe Ser Trp Ile Val Leu Leu Val Val		
210	215	220
Tyr Gly Val Asp Ser Val Leu Thr Ile Ile His Arg Leu Met Leu His		
225	230	235
Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Leu Met Ala		
245	250	255
Asn Glu Leu Glu Ile Pro His Val Met Val Ser Leu Ile Tyr Met Thr		
260	265	270
Ser Gln Ala Ile Ile Ile Val Gly Tyr Leu Leu Thr Pro Gly Trp Gly		
275	280	285
Tyr Cys Tyr Leu Leu Gly Thr Ile Val Ile Leu Ser Met Val Tyr Ile		
290	295	300
Leu Phe Met Lys Lys Tyr Phe His Leu His Pro Ala Met Lys		
305	310	315

<210> 5790

<211> 495

<212> PRT

<213> B.fragilis

<400> 5790

Ile Asn Glu Tyr Tyr Met Lys Arg Tyr Phe Leu Leu Ser Ala Phe Ala		
1	5	10
Phe Cys Ser Leu Ala Leu Ser Ala Gln Glu Thr Gln Glu Ile Thr Leu		
20	25	30
Asn Glu Ala Ile Ala Leu Ala Arg Thr Gln Ser Val Asp Ala Ala Val		
35	40	45
Ala Leu Asn Glu Leu Lys Thr Ala Tyr Trp Glu Tyr Arg Thr Phe Arg		
50	55	60
Ala Asp Leu Leu Pro Glu Val Asn Phe Ser Gly Thr Leu Pro Ser Tyr		
65	70	75
Ser Lys Gln Tyr Asn Ser Tyr Gln Asn Glu Asp Gly Ser Tyr Ser Phe		
85	90	95
Val Arg Ser Asn Lys Leu Gly Leu Asn Gly Ala Leu Ser Ile Asp Gln		
100	105	110
Asn Ile Trp Phe Thr Gly Gly Lys Val Ser Leu Ser Ser Leu Asp		
115	120	125
Phe Met Lys Gln Leu Gly Ser Gly Gly Ser Arg Gln Phe Met Ser Val		
130	135	140
Pro Ile Ala Leu Gln Leu Thr Gln Pro Ile Phe Gly Val Asn Asn Leu		
145	150	155
Lys Trp Asn Arg Arg Ile Glu Pro Val Arg Tyr Glu Glu Ala Lys Ala		
165	170	175
Ala Phe Ile Thr Ala Thr Glu Thr Val Thr Met Asn Ala Ile Thr Tyr		
180	185	190
Phe Phe Asn Leu Leu Ser Ala Lys Glu Thr Leu Gly Thr Ala Arg Gln		
195	200	205
Asn Gln Val Asn Ala Asp Arg Leu Tyr Glu Val Ala Gly Ala Lys Arg		
210	215	220
Lys Met Gly Gln Ile Ser Glu Asn Glu Leu Leu Gln Leu Lys Leu Ala		
225	230	235
Ala Leu Lys Ala Arg Ala Ala Val Thr Asp Ala Glu Ser Asn Leu Asn		
245	250	255
Ala His Met Phe Arg Leu Arg Ser Phe Leu Ala Ile Gly Asn Asp Leu		
260	265	270
Ile Leu Glu Pro Val Val Pro Glu Ser Ala Pro Asn Leu Lys Met Glu		
275	280	285
Tyr Asn Gln Val Leu Asn Lys Ala Leu Glu Arg Asn Ser Phe Ala His		

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      290                      295                      300
Asn Ile Arg Arg Arg Gln Leu Glu Ala Glu Tyr Glu Val Ala Thr Ala
305                      310                      315                      320
Arg Gly Asn Leu Arg Ser Val Asp Leu Phe Ala Asn Val Gly Tyr Thr
      325                      330                      335
Gly Leu Asn Lys Asp Leu Ser Pro Ala Tyr His Asn Leu Leu Asp Asn
      340                      345                      350
Gln Val Val Glu Val Gly Val Lys Ile Pro Ile Leu Asp Trp Gly Lys
      355                      360                      365
Arg Arg Gly Lys Val Arg Val Ala Lys Ser Asn Arg Asp Val Thr Leu
      370                      375                      380
Ser Lys Ile Lys Lys Glu Gln Met Asp Phe Asp Gln Asp Ile Phe Leu
385                      390                      395                      400
Leu Val Glu His Phe Asn Asn Gln Ala Gln Gln Leu Ser Ile Ala Asn
      405                      410                      415
Glu Ala Asp Lys Ile Ala Gln Gln Arg Tyr Lys Thr Ser Val Glu Thr
      420                      425                      430
Phe Leu Ile Gly Lys Ile Asn Thr Leu Asp Leu Asn Asp Ala Gln Asn
      435                      440                      445
Ser Lys Asp Asp Ala Arg Gln Lys His Ile Asn Glu Leu Tyr Trp Tyr
450                      455                      460
Trp Tyr Tyr Tyr Tyr Gln Leu Arg Ser Leu Thr Leu Trp Asp Phe Gln
465                      470                      475                      480
Asn Asn Thr Pro Leu Glu Ala Asp Phe Glu Asp Ile Val Lys Lys
      485                      490                      495

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<210> 5791

<211> 801

<212> PRT

<213> B.fragilis

<400> 5791

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Asn Gly Gly Tyr Asn Glu Glu Lys Ser Gln Ile Cys Lys Arg Gln Arg
1                      5                      10                      15
Arg Met Lys Arg Ile Ile Leu Ala Ala Leu Gly Ser Ala Leu Leu Leu
      20                      25                      30
Pro Ser Gln Ala Gln Gln Lys Asn Lys Glu Tyr Thr Asn Phe Asn Asp
      35                      40                      45
Ser Val Phe Ser Ile Asn Glu Val Val Val Ala Thr Asn Tyr Arg Arg
50                      55                      60
Lys Thr Asp Ala Leu Lys Leu Asp Val Pro Ala Lys Phe Ile Pro Ile
65                      70                      75                      80
Ser Thr Asn Ser Ile Thr Ser Gly Met Leu Glu Lys Arg Asn Ile Arg
      85                      90                      95
Asp Ile Gln Glu Ala Ser Arg Phe Leu Pro Gly Val Arg Phe Arg Thr
      100                      105                      110
Ser Tyr Gly Ala Phe Thr Gln Phe Ser Ile Arg Gly Phe Asp Asn Ser
      115                      120                      125
Val Ile Met Val Asp Gly Val Arg Asp Glu Arg Ser Ser Ile Asp Asn
130                      135                      140
Ser Tyr Pro Phe Met Asp Leu Ser Ala Val Glu Ser Ile Glu Leu Leu
145                      150                      155                      160
Lys Gly Pro Ala Ser Val Leu Tyr Gly Gln Ser Ala Val Gly Gly Val
      165                      170                      175
Leu Asn Ile Val Arg Lys Ala Pro Val Ser Lys Gln Ser Val Tyr Ala
180                      185                      190
Arg Leu Ala Tyr Gly Ser Tyr Tyr Asn Lys Gln Ala Thr Met Ala Leu
195                      200                      205
Gly Gly Lys Leu Ile Gly Pro Leu Asn Tyr Arg Ala Ser Val Asn Trp

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Pro Thr Thr Ser Ser Lys Gly Lys Gln Tyr Ala Tyr Ile Pro Lys Asn
 690          695          700
Thr Phe Tyr Ala Phe Gly Ala Tyr Thr Val Ser Lys Gly Val Leu Lys
705          710          715          720
Gly Leu Gly Val Asn Phe Ser Thr Ser Phe Gln Asp Lys Val Tyr Arg
          725          730          735
Asn Ser Asp Asn Thr Ser Ser Phe Asp Ala Tyr Trp Leu Thr Asp Leu
          740          745          750
Gly Phe Ser Tyr Thr Leu Lys Ser Asn Val Arg Leu Gly Val Asn Ile
          755          760          765
Asn Asn Leu Phe Asn Lys Glu Tyr Cys Asn Gln Ala Leu Gly Asn Gln
          770          775          780
Leu Ile Pro Ser Met Pro Arg Asn Phe Met Leu Ser Ala Ser Tyr Thr
785          790          795          800
Leu

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<210> 5792
<211> 94
<212> PRT
<213> B.fragilis

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<400> 5792
Val Arg Phe His Lys Ile Lys Glu Ile Phe Leu Phe Glu Leu Tyr Lys
 1          5          10          15
Tyr Ser Leu Tyr Ile Leu Gly Phe Arg Arg Leu Phe Ser Pro Val Gly
          20          25          30
Ser Val Cys Thr Ile Gln Ile Tyr Thr Lys Arg Arg Gly Tyr Pro Leu
          35          40          45
Gly Val Ala Ser His Lys Pro Val Asn Leu Lys Leu Phe Phe Asp Gly
          50          55          60
Cys Leu Arg Arg Cys Gln Thr Cys Asp Arg His Thr Glu Arg Arg Thr
65          70          75          80
Ala Asn Val Ile Gln Thr Tyr Phe Met Ala Glu Leu Asn Arg
          85          90

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<210> 5793
<211> 299
<212> PRT
<213> B.fragilis

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<400> 5793
Ser Met Asn Leu Leu Phe Thr Gly Ala Ser Gly Phe Leu Gly Ser Asn
 1          5          10          15
Leu Tyr Ser Leu Leu Lys Asp Lys Tyr Gln Ile Arg Thr Val Gly Leu
          20          25          30
Thr Pro Arg Asp Asn Tyr Thr Ile Asn Leu Val Ser Asp Val Pro Lys
          35          40          45
Leu Asn Ile Lys Tyr Asp Val Val Leu His Ala Ala Gly Lys Ala His
          50          55          60
Ser Ile Pro Lys Thr Glu Glu Glu Lys Gln Leu Phe Phe Asp Val Asn
65          70          75          80
Leu Gln Gly Thr Lys Asn Leu Cys Thr Ala Leu Glu Asn Ser Gly Ile
          85          90          95
Pro Lys Ala Phe Ile Phe Ile Ser Thr Val Ala Val Tyr Gly Cys Asp
          100          105          110
Ser Gly Glu Asn Ile Thr Glu Glu His Pro Leu Asn Gly Thr Thr Pro
          115          120          125
Tyr Ala Leu Ser Lys Ile Lys Ala Glu Lys Tyr Leu Glu Gly Trp Cys

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130		135		140
Ala Met His Asn Val Lys Leu Ser Ile Leu Arg Pro Ser Leu Ile Ala				
145		150		155
Gly Pro Asn Pro Pro Gly Asn Leu Gly Ala Met Ile Arg Gly Ile Arg				160
		165		170
Asn Gly Lys Tyr Leu Ser Ile Ala Gly Gly Lys Ala Arg Lys Ser Val				175
		180		185
Leu Met Val Gln Asp Ile Ala Asn Leu Leu Pro Met Leu Ile Glu Lys				190
		195		200
Gly Gly Ile Tyr Asn Val Cys Asp Ser Tyr Gln Pro Ser Phe Arg Glu				205
		210		215
Leu Glu Met Val Ile Cys Asn Gln Leu Asn Lys Lys Arg Pro Ile Ser				220
225		230		235
Ile Pro Tyr Trp Leu Ala Lys Ser Met Ala Val Ile Gly Asp Cys Leu				240
		245		250
Gly Lys Lys Ala Pro Ile Asn Ser Leu Lys Leu Arg Lys Ile Thr Ser				255
		260		265
Ser Leu Thr Phe Ser Asn Glu Lys Ala Val Arg Glu Leu Lys Trp Lys				270
		275		280
Pro Met Asn Val Leu Glu Thr Phe Leu Ile Glu				285
		290		295

<210> 5794

<211> 478

<212> PRT

<213> B.fragilis

<400> 5794

Ser Gly Cys His Pro Gly Lys Cys His Ser Leu Leu Ser Arg Cys Gly				
1		5		10
Thr Thr Gln Thr Arg Lys Arg Arg Ile Ala Asp Asp Arg Tyr Thr Asp				15
		20		25
Val Leu Phe Ile Arg Ile Val His Tyr Ile Lys Arg Met Lys Thr Ser				30
		35		40
Glu Thr Thr Arg Pro Thr Leu Ser Ser Leu Pro Val Gly Lys Arg Ala				45
		50		55
Glu Glu Gly Thr Pro His Asn Leu Phe Thr Val Ile Gly Leu Asp Asp				60
65		70		75
Ser Pro Ser Pro Tyr Leu Ser Pro Ser Val Lys Ala Leu Ile Asp Gln				80
		85		90
Gly Cys Val Phe Ser Gly Gly Thr Arg His His Asp Ile Val Ala Pro				95
		100		105
Leu Leu Pro Ala Gly Ala Lys Trp Ile Asp Ile Thr Val Pro Leu Asp				110
		115		120
Gln Val Phe Ala Arg Tyr Ala Gly His Pro His Ile Ile Val Phe Ala				125
		130		135
Ser Gly Asp Pro Ile Phe Phe Gly Phe Ala Asn Thr Ile His Arg Arg				140
145		150		155
Leu Pro Asp Ala Glu Ile Arg Leu Tyr Pro Ser Phe Asn Ser Leu Gln				160
		165		170
Thr Leu Ala His Arg Leu Val Met Pro Tyr Asp Asp Met Arg Thr Ile				175
		180		185
Ser Leu Thr Gly Arg Pro Trp His Gly Phe Asp Arg Ala Leu Ile Glu				190
		195		200
Arg Thr Pro Lys Met Gly Ile Leu Thr Asp Arg Glu His Thr Pro Ala				205
		210		215
Thr Ile Ala Ser Arg Met Leu Asp Tyr Gly Tyr Asn Asp Tyr Thr Met				220
225		230		235
Tyr Ile Gly Glu His Leu Gly His Pro Ala Lys Glu Leu Ile Arg Arg				240

<211> 103
 <212> PRT
 <213> B.fragilis

<400> 5796

Phe	Gly	Phe	Leu	Phe	Leu	Phe	Thr	Val	Tyr	Arg	Cys	Phe	Lys	Ile	Thr
1			5						10					15	
Val	Arg	Asp	Asn	Ser	Ser	Ile	Pro	Ala	Thr	Ala	Gln	Ser	Asp	Gly	Gly
		20						25					30		
Met	Leu	Leu	Asn	Tyr	Asp	Asp	Thr	Glu	Asn	Arg	Thr	Tyr	Leu	Arg	Phe
		35					40					45			
Thr	Gly	Tyr	Pro	Pro	Leu	Ile	Thr	Gln	Leu	Asn	Asn	Ile	Gly	Lys	Glu
	50					55					60				
Gly	Tyr	Ile	Asn	Val	Ile	Asp	Thr	Lys	Ser	Val	Leu	Lys	Val	Ser	Pro
65				70					75					80	
Ser	Asn	Asn	Gln	Ile	Glu	Val	Ala	Pro	Phe	Glu	Asp	Tyr	Asp	Ala	His
			85						90					95	
Thr	Thr	Arg	Cys	Val	Gln	Glu									
			100												

<210> 5797
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 5797

Thr	Gln	Phe	Leu	Leu	Ser	Ile	Tyr	Phe	Lys	Tyr	Gln	Ile	Ser	Lys	Tyr
1			5						10					15	
Tyr	Lys	Ile	Tyr	His	His	Trp	Ala	Thr	Gly	Lys	Phe	Leu	Gly	Tyr	Tyr
		20						25					30		
Lys	Cys	Ser	Tyr	Tyr	Gln	Ser	Arg	Tyr	Tyr	Arg	Cys	Arg	Val	Asp	Ser
		35					40					45			
Arg	Ser	Tyr	Asn	Ser	Trp	Arg	Phe	Met	Ser	Thr	Asn	Glu	Ser	Tyr	Leu
	50					55					60				
Phe	Arg	Ser	Ile												
65															

<210> 5798
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 5798

Asn	Ile	Ala	Lys	Thr	Met	Ile	Thr	Val	Cys	Met	Ala	Thr	Tyr	Asn	Gly
1			5						10					15	
Glu	Lys	Tyr	Ile	Glu	Glu	Gln	Leu	Glu	Ser	Val	Leu	Met	Gln	Leu	His
		20						25					30		
Ser	Asn	Asp	Glu	Val	Ile	Ile	Ser	Asp	Asp	Gly	Ser	Gly	Asp	Ser	Thr
		35					40					45			
Val	Asp	Leu	Ile	Arg	Thr	Phe	Asn	Asp	Pro	Arg	Ile	Arg	Leu	Leu	Val
	50					55					60				
Gly	Asn	Asn	Phe	Phe	Ser	Pro	Thr	Gln	Asn	Phe	Glu	Asn	Ala	Leu	Lys
65				70					75					80	
Tyr	Ala	Lys	Gly	Asp	Tyr	Ile	Phe	Leu	Cys	Asp	Gln	Asp	Asp	Val	Trp
			85					90						95	
Leu	Pro	Asp	Lys	Val	Glu	Ser	Met	Leu	Gln	Tyr	Leu	Leu	Gln	Tyr	Asp
		100						105					110		
Leu	Val	Val	Ser	Asp	Cys	Lys	Val	Val	Asp	Ala	Glu	Leu	Asn	Val	Ile
		115					120						125		

Ser Gln Ser Phe Phe Met Gly Arg Ser Ser Gly Lys Gly Phe Trp Lys
 130 135 140
 Asn Leu Ile Lys Asn Thr Tyr Leu Gly Cys Cys Ile Ala Phe Arg Lys
 145 150 155 160
 Glu Val Leu Gly Tyr Ile Leu Pro Phe Pro Arg Asn Ile Ala Met His
 165 170 175
 Asp Ile Trp Ile Gly Leu Ser Val Glu Met His Ser Asn Ser Phe Phe
 180 185 190
 Leu Pro Arg Gln Leu Ile Leu Tyr Arg Arg His Gly Ser Asn Val Ser
 195 200 205
 Phe Gly Gly Glu Gly Ser Lys Tyr Ser Leu Met Tyr Lys Ile Lys Tyr
 210 215 220
 Arg Leu Cys Met Leu Phe Tyr Leu Leu Lys Arg Lys Tyr Leu Asn Lys
 225 230 235 240

<210> 5799

<211> 68

<212> PRT

<213> B.fragilis

<400> 5799

Ala Arg His Asn Thr Pro Glu Val Arg Gly Pro Thr Ser His Leu Pro
 1 5 10 15
 Ser Arg Ile Ser His Asp Phe Tyr Lys Lys Val Arg Asp Thr Ala Lys
 20 25 30
 Thr Ile Asn His Ser Glu Gln Thr Thr Asn Thr Ile Ser Tyr Ser Thr
 35 40 45
 Asn Ser Ile Asn Tyr Leu Pro Asn Leu Ser Arg Arg Leu Glu Asn Gly
 50 55 60
 Pro Tyr Tyr Arg
 65

<210> 5800

<211> 409

<212> PRT

<213> B.fragilis

<400> 5800

Ser Ile His Lys Ile Asn Ile Met Glu Lys Asn Ile Phe Lys Leu Asp
 1 5 10 15
 Asn Glu Gln Leu Lys Gly Ile Ala His Ala Phe Arg Glu Lys Val Glu
 20 25 30
 Glu Gly Leu Asn Lys Asn Asn Ala Glu Ile Gln Cys Ile Pro Thr Phe
 35 40 45
 Ile Leu Pro Lys Ala Thr Asp Val Lys Gly Lys Ala Leu Val Leu Asp
 50 55 60
 Leu Gly Gly Thr Asn Tyr Arg Val Ala Ile Val Asp Phe Ser Thr Glu
 65 70 75 80
 Lys Pro Ile Ile Tyr Pro Asn Asn Gly Trp Lys Lys Asp Met Ser Ile
 85 90 95
 Met Lys Ser Pro Gly Tyr Thr Arg Glu Glu Leu Phe Lys Glu Leu Ala
 100 105 110
 Asp Leu Ile Val Glu Ile Lys Arg Glu Glu Glu Met Pro Ile Gly Tyr
 115 120 125
 Cys Phe Ser Tyr Pro Thr Glu Ser Ile Pro Gly Gly Asp Ala Arg Leu
 130 135 140
 Leu Arg Trp Thr Lys Gly Val Asp Ile Arg Glu Met Val Gly Gln Phe
 145 150 155 160
 Val Gly Lys Pro Leu Leu Asp Tyr Leu Asn Glu Lys Asn Lys Ile Arg


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Leu Ala Gln Leu Arg Gln Gln Pro Leu Leu Thr Thr Ile Ser Val Leu
      20                      25                      30
Gly Thr Ala Leu Thr Ile Cys Leu Ile Met Val Val Val Met Gln Gln
      35                      40                      45
Gln Ile Lys Thr Ala Pro Phe Ala Pro Glu Ser Asn Arg Asn Arg Leu
      50                      55                      60
Leu His Val Lys Gln Met Ser Thr Ser Asn Lys Asn Trp Ser Asp Asp
      65                      70                      75                      80
Gly Ser Ser Asn Gly Pro Met Gly Leu Gln Thr Ala Lys Gly Cys Phe
      85                      90                      95
Glu Gly Leu Thr Thr Ala Glu Glu Val Ser Ile Tyr Thr Ile Pro Glu
      100                     105                     110
Thr Met Gln Val Ala Leu Pro Arg Gly Val Arg Thr Gly Ile Asp Ala
      115                     120                     125
Leu Glu Thr Asp Gly Ala Phe Trp Arg Ile Phe Asp Phe Ser Phe Ile
      130                     135                     140
Asp Gly Lys Pro Tyr Ser Asp Ala Glu Val Lys Ser Gly Leu Pro Val
      145                     150                     155                     160
Ala Val Ile Thr Glu Ser Val Ala Arg Leu Leu Phe Gly Thr Ser His
      165                     170                     175
Gln Val Ser Gly Lys Glu Ile Leu Val Asn Asp Ala Val Tyr Arg Ile
      180                     185                     190
Ser Gly Val Val Lys Asp Val Ser Ser Met Ala Ser Thr Ala Tyr Ala
      195                     200                     205
Gln Ile Trp Val Pro Tyr Ser Ser Thr His Ile Thr Gly Gly Asp Asn
      210                     215                     220
Thr Trp Cys Asp Gly Ile Met Gly Val Met Arg Val Val Ile Leu Ala
      225                     230                     235                     240
Arg Ser Ser Ser Asp Phe Glu Ala Ile Arg Ala Glu Cys Glu Arg Arg
      245                     250                     255
Arg Leu Ala Tyr Asn Ala Gly Leu Gly Asp Tyr Phe Val Phe Tyr Arg
      260                     265                     270
Gly Gln Pro Asp Asp Gln Leu Thr Met Ser Gln His Lys Trp Ala Asn
      275                     280                     285
Val Gln Pro Asp Met Ala Ala Tyr Phe Arg Gln Gln Val Ile Ile Phe
      290                     295                     300
Leu Ile Leu Leu Leu Val Pro Ala Ile Asn Leu Ser Ser Met Thr His
      305                     310                     315                     320
Ser Arg Leu Arg Gln Arg Val Ala Glu Ile Gly Val Arg Arg Ala Phe
      325                     330                     335
Gly Ala Thr Arg Gly Gly Val Met Gly Gln Ile Val Ala Glu Asn Leu
      340                     345                     350
Val Leu Thr Leu Met Ala Gly Val Val Gly Leu Leu Phe Cys Leu Ile
      355                     360                     365
Ile Ser Tyr Cys Trp Gly Gly Thr Leu Phe Ala Asp Ser Arg Leu Met
      370                     375                     380
Tyr Leu Asn Thr Ala Pro Val Ile Glu Trp Lys Met Leu Phe Lys Phe
      385                     390                     395                     400
Ser Thr Phe Ile Tyr Ala Leu Leu Phe Cys Leu Ala Leu Asn Leu Leu
      405                     410                     415
Ser Ser Gly Trp Pro Ala Trp Arg Ala Ser Arg Met Ser Ile Ile Asn
      420                     425                     430
Ala Leu Ser Gly Lys Leu Asn
      435

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<210> 5803

<211> 95

<212> PRT

<213> B.fragilis

<400> 5803

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Leu Phe Phe Asn Ile Phe Leu Ser Ile Ile Gly Ser His Thr Asn Cys
1          5          10          15
Tyr His Arg Phe Ser Asn Ile Leu Leu His Ile Tyr Ile Thr His Thr
20          25          30
Asn Ile Val Leu Asn Ala Leu Lys Lys His Pro Ile Asn Ile Gln Lys
35          40          45
Thr Thr Thr Pro His Glu Ile Met Tyr Ser Gly Gln Phe Phe Phe Ser
50          55          60
Tyr Leu Ser Asn Asn Ile Thr Ala Ile Ile Pro Tyr Arg Gln Leu Arg
65          70          75          80
Thr Thr Thr Pro Ala Tyr Pro Lys Ser Arg Tyr Gly Ser Ala Ile
85          90          95

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<210> 5804

<211> 192

<212> PRT

<213> B.fragilis

<400> 5804

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Arg Lys Leu Lys Asn Lys Asn Arg Met Thr Ala Thr Glu Arg Thr Ala
1          5          10          15
Glu Tyr Arg Lys Ala Leu Asp Val Pro Ile Ser Gln Leu Glu Thr Asp
20          25          30
Arg Ile Val Lys Glu Ile Leu Asp Arg Pro Glu Asn Phe Asp Asn Ile
35          40          45
Tyr Arg Leu Thr Ser Asp Asp Lys Leu Leu Val Ser Trp Arg Ala Leu
50          55          60
Trp Ile Cys Asp Lys Leu Cys Arg Gln Lys Pro Glu Trp Leu Ile Pro
65          70          75          80
Phe Arg Glu Glu Leu Thr Gly Arg Leu Met Ser Cys Gly His Asp Gly
85          90          95
Ser Lys Arg Leu Leu Leu Ser Ile Leu Tyr His Ala Pro Ala Thr Lys
100          105          110
Val Pro Ser Val Ala Leu Leu Asn Phe Cys Leu Asp Ala Met Leu Ser
115          120          125
Pro Gln Glu Ser Ile Gly Val Gln Ser Leu Ala Ile Arg Met Ala Tyr
130          135          140
Arg Leu Cys Glu Pro Glu Pro Glu Leu Leu Tyr Glu Leu Arg Thr Ile
145          150          155          160
Leu Glu Ser Thr Glu Thr Glu Met Tyr Ser Thr Ala Val Lys Ser Ala
165          170          175
Val Arg Asn Thr Leu Lys Lys Ile Asn Gln Lys Asn Lys Lys Lys Lys
180          185          190

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<210> 5805

<211> 266

<212> PRT

<213> B.fragilis

<400> 5805

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Asn Glu Leu Lys Thr Arg Ser Glu Met Glu Lys Leu Ile Ile Ala Gly
1          5          10          15
Arg Glu Phe Asn Ser Arg Leu Phe Leu Gly Thr Gly Lys Phe Ser Ser
20          25          30
Asn Glu Trp Met Glu Gln Ser Ile Leu Ala Ser Gly Thr Glu Met Val
35          40          45
Thr Val Ala Met Lys Arg Val Asp Met Glu Ser Thr Glu Asp Asp Met

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50		55		60
Leu Lys His Ile Val	His Pro His Ile Gln	Leu Pro Asn Thr Ser		
65	70	75	80	
Gly Val Arg Asn Ala	Glu Glu Ala Val Phe	Ala Ala Gln Met Ala Arg		
	85	90	95	
Glu Ala Phe Gly Thr	Asn Trp Leu Lys	Leu Glu Ile His Pro Asp Pro		
	100	105	110	
Arg Tyr Leu Leu Pro	Asp Ser Val Glu Thr	Leu Lys Ala Thr Glu Glu		
	115	120	125	
Leu Val Lys Leu Gly	Phe Val Val Leu Pro	Tyr Cys Gln Ala Asp Pro		
	130	135	140	
Val Leu Cys Lys Gln	Leu Glu Glu Ala Gly	Ala Ala Thr Val Met Pro		
	145	150	155	160
Leu Gly Ala Pro Ile	Gly Thr Asn Lys Gly	Leu Gln Thr Lys Glu Phe		
	165	170	175	
Leu Gln Ile Ile Ile	Glu Gln Ala Gly Ile	Pro Val Val Val Asp Ala		
	180	185	190	
Gly Ile Gly Ala Pro	Ser His Ala Ala Glu	Ala Met Glu Met Gly Ala		
	195	200	205	
Ser Ala Cys Leu Val	Asn Thr Ala Ile Ala	Val Ala Gly Asn Pro Ile		
	210	215	220	
Glu Met Ala Lys Ala	Phe Lys Gln Ala Val	Glu Ala Gly Arg Thr Ala		
	225	230	235	240
Tyr Glu Ala Gly Leu	Gly Met Gln Ala Ile	Gly Phe Val Ala Glu Ala		
	245	250	255	
Ser Ser Pro Leu Thr	Ala Phe Leu Asn Glu			
	260	265		

<210> 5806

<211> 109

<212> PRT

<213> B.fragilis

<400> 5806

Lys Asn Ala Asn Thr	Lys Thr Gln His Pro	Ile Thr Glu Ser Ile Lys
1	5	10
Glu Lys Arg Gly Arg	Lys Thr Gly Ala Gln	Ile Pro Gly Ile Ile Ser
	20	25
Asn Asn Glu Gly Val	Ile Lys Ala Leu Ile	Glu Ser Tyr Ile Leu Asp
	35	40
Ala Lys Glu Gln Asn	Ile Lys Thr Cys Lys	Asp Ser Leu Ala Arg Tyr
	50	55
Ile Glu Glu Lys Glu	Leu Phe Gly Lys Met	Arg Asn Gly Val Phe Lys
	65	70
Pro Leu Val Phe Ser	Thr Ile Arg Asn Tyr	Val Asn Glu Ile Trp Asn
	85	90
Lys Met Glu Arg Lys	Lys Lys Asn Gln	Glu Gly Lys Arg
	100	105

<210> 5807

<211> 426

<212> PRT

<213> B.fragilis

<400> 5807

Lys Lys Asn Lys Arg	His Asp Ile Leu Met	Lys Asn Ile Phe Lys Asp
1	5	10
Leu Lys Ser Lys Asp	His Lys Arg Tyr	Leu Gly Gly Leu Asp Val Phe
	20	25
		30

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Arg Tyr Ile Gly Pro Gly Leu Leu Val Thr Val Gly Phe Ile Asp Pro
   35                               40   45
Gly Asn Trp Ala Ser Asn Phe Ala Ala Gly Ser Glu Phe Gly Tyr Ser
   50                               55   60
Leu Leu Trp Val Val Thr Leu Ser Thr Ile Met Leu Ile Ile Leu Gln
   65                               70   75                               80
His Asn Val Ala His Leu Gly Ile Val Thr Gly Leu Cys Leu Ser Glu
           85                               90   95
Ala Ala Thr Gln Tyr Thr Pro Lys Trp Val Ser Arg Pro Ile Leu Gly
           100                          105   110
Thr Ala Val Leu Ala Ser Ile Ser Thr Ser Leu Ala Glu Ile Leu Gly
           115                          120   125
Gly Ala Ile Ala Leu Glu Met Leu Leu Asp Ile Pro Ile Val Trp Gly
           130                          135   140
Ala Val Leu Thr Thr Val Phe Val Ser Ile Met Leu Phe Thr Asn Ser
   145                          150   155   160
Tyr Lys Lys Ile Glu Arg Ser Ile Ile Ala Phe Val Ser Val Ile Gly
           165                          170   175
Leu Ser Phe Ile Tyr Glu Leu Phe Leu Val Asp Ile Asp Trp Pro Met
           180                          185   190
Ala Val Glu Gly Trp Val Thr Pro Ala Ile Pro Lys Gly Ser Met Leu
           195                          200   205
Ile Ile Met Ser Val Leu Gly Ala Val Val Met Pro His Asn Leu Phe
           210                          215   220
Leu His Ser Glu Val Ile Gln Ser His Glu Tyr Asn Lys Gln Asp Thr
   225                          230   235   240
Ala Ser Ile Lys Lys Val Leu Lys Tyr Glu Leu Phe Asp Thr Leu Phe
           245                          250   255
Ser Met Ile Ile Gly Trp Ala Ile Asn Ser Ala Met Ile Leu Leu Ala
           260                          265   270
Ala Ala Thr Phe Phe Lys Ser Gly Ile Gln Val Glu Glu Leu Gln Gln
           275                          280   285
Ala Lys Ser Leu Leu Glu Pro Leu Leu Gly Ser Asn Ala Ala Ile Val
           290                          295   300
Phe Ala Leu Ala Leu Leu Met Ala Gly Ile Ser Ser Thr Ile Thr Ser
   305                          310   315   320
Gly Met Ala Ala Gly Ser Ile Phe Ala Gly Ile Phe Gly Glu Ser Tyr
           325                          330   335
His Ile Lys Asp Ser His Ser Gln Val Gly Val Ile Leu Ser Leu Gly
           340                          345   350
Ile Ala Leu Leu Leu Ile Phe Leu Ser Ala Asp Pro Phe Lys Gly Leu
           355                          360   365
Ile Ile Ser Gln Met Val Leu Ser Ile Gln Leu Pro Phe Thr Val Phe
           370                          375   380
Leu Gln Val Gly Leu Thr Ser Ser Arg Lys Val Met Gly Asp Tyr Val
   385                          390   395   400
Asn Ser Lys Trp Ser Thr Phe Val Leu Tyr Thr Ile Ala Val Ile Val
           405                          410   415
Thr Val Leu Asn Ile Met Leu Leu Phe Ser
           420                          425

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<210> 5808

<211> 95

<212> PRT

<213> B.fragilis

<400> 5808

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Met Asn Asp Lys Pro Ile Thr Asp Thr Lys Ala Met Met Glu Arg Ser
1           5           10           15

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Ile Phe Leu Tyr Glu Phe Val Lys Ser Met Met Glu Thr Lys Thr Val
 20 25 30
 Val Arg Thr Ala Pro Gln Thr Ile Gly Met Ser Ser Asn Ile Ser Ser
 35 40 45
 Ala Met Ala Pro Pro Arg Ile Ser Ala Ser Asp Val Glu Met Glu Ala
 50 55 60
 Ser Thr Ala Val Pro Ser Met Gly Arg Asp Thr His Leu Gly Val Tyr
 65 70 75 80
 Cys Val Ala Ala Ser Glu Arg Gln Ser Pro Val Thr Ile Pro Lys
 85 90 95

<210> 5809

<211> 448

<212> PRT

<213> B.fragilis

<400> 5809

Asn Cys Leu Asn Leu Ile Leu Tyr Ile Pro Ile Met Thr Val Leu Arg
 1 5 10 15
 Ser Met Lys Asp Phe Ser Ser Met Asn Ile Thr Ala Ser Ile Leu Leu
 20 25 30
 Phe Val Thr Ala Ile Ala Ala Ala Val Ile Ala Asn Ser Pro Ala Ala
 35 40 45
 Ser Val Tyr Gln Glu Phe Leu Ser His Glu Leu His Phe Arg Ile Gly
 50 55 60
 Gly Phe Asn Leu Leu Ser His Ala Gly His Asn Leu Thr Met Ile Glu
 65 70 75 80
 Phe Ile Asn Asp Gly Leu Met Thr Ile Phe Phe Leu Met Val Gly Leu
 85 90 95
 Glu Ile Lys Arg Glu Leu Leu Val Gly Glu Leu Ser Ser Phe Arg Lys
 100 105 110
 Ala Ala Leu Pro Phe Ile Ala Ala Cys Gly Gly Met Val Val Pro Val
 115 120 125
 Val Ile Tyr Ser Met Val Cys Ala Pro Gly Thr Glu Gly Gly Gln Gly
 130 135 140
 Leu Ala Ile Pro Met Ala Thr Asp Ile Ala Phe Ser Leu Gly Val Leu
 145 150 155 160
 Ser Leu Leu Gly Lys Arg Val Pro Leu Ser Leu Lys Ile Phe Leu Thr
 165 170 175
 Ala Phe Ala Val Val Asp Asp Ile Gly Gly Ile Leu Val Ile Ala Ile
 180 185 190
 Phe Tyr Ser Ser His Val Ala Tyr Glu Tyr Leu Leu Trp Ala Ala Leu
 195 200 205
 Leu Tyr Val Leu Leu Tyr Phe Ile Gly Lys Lys Gly Ala Thr Asn Lys
 210 215 220
 Ile Phe Phe Leu Val Val Gly Val Val Ile Trp Tyr Leu Phe Leu Gln
 225 230 235 240
 Ser Gly Ile His Ser Thr Ile Ser Gly Val Ile Leu Ala Phe Val Ile
 245 250 255
 Pro Ala Lys Pro Gln Leu Asn Val Gly Thr Tyr Ile Glu Arg Ile Arg
 260 265 270
 Arg Ile Ile Ser Thr Phe Pro Glu Met Gly Ala Asn Asn Ile Val Leu
 275 280 285
 Thr Asn Gln Gln Ile Ala Lys Leu Lys Glu Val Glu Ser Ala Ser Asp
 290 295 300
 Arg Val Ile Ser Pro Leu Gln Ser Leu Glu Asp Asn Leu His Gly Ala
 305 310 315 320
 Val Asn Tyr Leu Val Leu Pro Leu Phe Ala Phe Val Asn Ala Gly Val
 325 330 335

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Met Phe Ser Gly Glu Gly Glu Val Ile Gly Gly Val Thr Leu Ala Val
      340      345      350
Ala Leu Gly Leu Leu Ala Gly Lys Phe Leu Gly Ile Tyr Ser Phe Thr
      355      360      365
Trp Leu Ala Val Lys Ser Gly Leu Thr Pro Met Pro Leu Gly Met Asn
      370      375      380
Trp Lys Asn Ile Ser Gly Val Ala Leu Leu Gly Gly Ile Gly Phe Thr
      385      390      395      400
Val Ser Leu Phe Ile Ala Asn Leu Ser Phe Gly Ser Ala His Pro Val
      405      410      415
Leu Leu Asn Gln Ala Lys Leu Gly Val Leu Ser Gly Thr Val Met Ala
      420      425      430
Gly Ile Leu Gly Tyr Leu Val Leu His Trp Val Leu Pro Lys Arg Arg
      435      440      445

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<210> 5810

<211> 337

<212> PRT

<213> B.fragilis

<400> 5810

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Pro Asn Leu Asn Ile Met Lys Tyr Phe Val Pro Leu Phe Leu Ser Leu
1      5      10      15
Phe Phe Leu Val Phe Met Ser Cys Gly Asn Glu Asp Asn Ala Trp Asp
      20      25      30
Asn Asn Ile Pro Ile Ile Thr Pro Asn Glu Gln Ser Asp Ser Ser Gly
      35      40      45
Leu Leu Lys Ser Gln Ile Thr Asp Ile Ile Asn Tyr Ser Lys Ile Asn
      50      55      60
Phe Asp Glu Asn Phe Asn Asn Thr Glu Leu Tyr Lys Asn Leu Ile Leu
65      70      75      80
Ser Pro Lys Trp Glu Asn Val Ser Met Val Leu Gln Lys Gln Asp Thr
      85      90      95
Leu His Leu Cys Val Pro Leu Leu Ala Gln Asp Asn Pro Glu His Asn
      100      105      110
Ser Tyr Tyr Leu Phe Ile Ser Asn Ile Lys Ser Ala Asn Ile Ile Arg
      115      120      125
Phe Thr Ile Ile Gly Leu Pro Glu Asn Phe Trp Asp Ile Ile Asn Ala
      130      135      140
Pro Ile Thr Arg Ala Gly Ile Ile Asp Ala Gly Trp Ile Pro Glu Val
145      150      155      160
Thr Ile Leu Gly Asp Leu Cys Arg Gln Met Ser His Ile Cys Ser Asp
      165      170      175
Pro Tyr Asp Glu Ala Phe Leu Glu Phe Leu His Ser Lys Trp Leu Lys
      180      185      190
Glu His Gly Asn Glu Ser Ser Ser Asp Ser Ser Ser Ser Gly Gly Asp
      195      200      205
Tyr Ser Arg Leu Thr Glu Ala Glu Lys Arg Phe Leu Met Arg His Pro
      210      215      220
Gln Val Ile Lys Lys Phe His Asp Asn Ala Arg Lys Ala Ser Glu Ala
225      230      235      240
Ala Lys Lys Phe Pro Gly Gln His Asn Gly Glu Gly Asp Ala Val Arg
      245      250      255
His Val Tyr Trp Ser Ala Leu Asn Thr Leu Ser Glu Asn Ala Asn Leu
      260      265      270
Ala Lys Glu Phe Gly Asp Ala His Glu Gln Asn Pro Gly Gln Asp Ile
      275      280      285
Ala Glu Lys Asn Met Asp Leu Phe Asn Asn Ser Ile Gly Tyr Gln Leu
      290      295      300

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Gly Asp Leu Ala Lys Gln Asn Lys Trp Ser Glu Glu Arg Leu Phe Lys
 305 310 315 320
 Glu Ile Ile Lys Tyr Lys Asn Asp Gly Lys Leu Gln Thr Lys Leu His
 325 330 335
 Pro

<210> 5811
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 5811
 Ile Leu Ser Asn Arg Asn Thr Phe Asp Pro Thr Tyr Leu Trp Gly Asp
 1 5 10 15
 Asn Leu Ser Ile Asn Pro Leu Asn His Ile Arg Met Lys Gln Lys Lys
 20 25 30
 Arg Pro Ala Ser Gln Thr Glu Ala Met Lys Leu Arg Trp Lys Lys Arg
 35 40 45
 Ile Val Phe Glu Lys Gly Tyr Thr Glu Met Cys Ala Glu Trp Met Ala
 50 55 60
 Glu Arg Leu Glu Ala Leu Thr Asp His Leu Gln Tyr Gly His Ala Ala
 65 70 75 80
 Ile Ala Tyr Gln Lys Gln Asn Gly Asp Phe Arg Leu Val Lys Ala Thr
 85 90 95
 Leu Ile Tyr Tyr Glu Ala Glu Phe His Lys Lys Tyr Asp Pro Thr Lys
 100 105 110
 Ile Glu Gly Ala Val Val Tyr Trp Asn Val Asp Glu Gln Arg Trp Thr
 115 120 125
 Thr Phe Gln Val Glu Asn Phe Met Glu Trp Arg Pro Ile Val
 130 135 140

<210> 5812
 <211> 827
 <212> PRT
 <213> B.fragilis

<400> 5812
 Lys His Lys Lys Leu Asn Asp Met Asn Ile Ser Tyr Asn Trp Leu Lys
 1 5 10 15
 Glu Tyr Val Asn Phe Asp Leu Thr Pro Asp Glu Val Ala Ala Ala Leu
 20 25 30
 Thr Ser Ile Gly Leu Glu Thr Gly Gly Val Glu Glu Val Gln Thr Ile
 35 40 45
 Lys Gly Gly Leu Glu Gly Leu Val Ile Gly Glu Val Leu Thr Cys Val
 50 55 60
 Glu His Pro Asn Ser Asp His Leu His Ile Thr Thr Val Asn Leu Gly
 65 70 75 80
 Asn Gly Glu Pro Thr Gln Ile Val Cys Gly Ala Pro Asn Val Ala Ala
 85 90 95
 Gly Gln Lys Val Val Val Ala Thr Leu Gly Thr Lys Leu Tyr Asp Gly
 100 105 110
 Asp Glu Cys Phe Thr Ile Lys Lys Ser Lys Ile Arg Gly Val Glu Ser
 115 120 125
 Ile Gly Met Ile Cys Ala Glu Asp Glu Ile Gly Ile Gly Thr Ser His
 130 135 140
 Asp Gly Ile Ile Val Leu Pro Glu Asp Ala Val Pro Gly Thr Leu Ala
 145 150 155 160
 Lys Asp Tyr Tyr Asn Val Lys Ser Asp Tyr Val Leu Glu Val Asp Ile

				165					170					175			
Thr	Pro	Asn	Arg	Ala	Asp	Ala	Cys	Ser	His	Tyr	Gly	Val	Ala	Arg	Asp		
			180					185					190				
Leu	Tyr	Ala	Tyr	Leu	Val	Gln	Asn	Gly	Lys	Gln	Ala	Ala	Leu	Thr	Arg		
		195					200					205					
Pro	Ser	Val	Asp	Ala	Phe	Ala	Val	Glu	Asn	His	Asp	Leu	Asp	Ile	Lys		
	210					215					220						
Val	Thr	Val	Glu	Asn	Ser	Glu	Ala	Cys	Pro	Arg	Tyr	Ala	Gly	Val	Thr		
225					230					235					240		
Val	Lys	Gly	Val	Thr	Val	Lys	Glu	Ser	Pro	Glu	Trp	Leu	Gln	Asn	Lys		
				245					250					255			
Leu	Arg	Ile	Ile	Gly	Leu	Arg	Pro	Ile	Asn	Asn	Val	Val	Asp	Ile	Thr		
			260					265					270				
Asn	Tyr	Ile	Val	His	Ala	Phe	Gly	Gln	Pro	Leu	His	Cys	Phe	Asp	Ala		
		275					280					285					
Asn	Lys	Ile	Lys	Gly	Gly	Glu	Val	Ile	Val	Lys	Thr	Met	Pro	Glu	Gly		
	290					295					300						
Thr	Thr	Phe	Val	Thr	Leu	Asp	Gly	Val	Glu	Arg	Lys	Leu	Asn	Glu	Arg		
305					310					315					320		
Asp	Leu	Met	Ile	Cys	Asn	Lys	Glu	Asp	Ala	Met	Cys	Ile	Ala	Gly	Val		
				325					330					335			
Phe	Gly	Gly	Leu	Asp	Ser	Gly	Ser	Thr	Glu	Ala	Thr	Thr	Asp	Val	Phe		
			340					345					350				
Leu	Glu	Ser	Ala	Tyr	Phe	His	Pro	Thr	Trp	Val	Arg	Lys	Thr	Ala	Arg		
		355					360					365					
Arg	His	Gly	Leu	Asn	Thr	Asp	Ala	Ser	Phe	Arg	Phe	Glu	Arg	Gly	Ile		
	370					375					380						
Asp	Pro	Asn	Ile	Thr	Ile	Tyr	Cys	Leu	Lys	Leu	Ala	Ala	Met	Met	Val		
385					390					395					400		
Lys	Glu	Leu	Ala	Gly	Gly	Thr	Ile	Ser	Ser	Glu	Ile	Lys	Asp	Val	Cys		
				405					410					415			
Ala	Ala	Pro	Ala	Gln	Asp	Phe	Ile	Val	Glu	Leu	Thr	Tyr	Glu	Lys	Val		
			420					425					430				
His	Ser	Leu	Ile	Gly	Lys	Val	Ile	Pro	Val	Glu	Thr	Ile	Lys	Ser	Ile		
		435					440					445					
Val	Thr	Ser	Leu	Glu	Met	Lys	Ile	Met	Asp	Glu	Thr	Ala	Glu	Gly	Leu		
	450					455					460						
Thr	Leu	Ala	Val	Pro	Pro	Tyr	Arg	Val	Asp	Val	Gln	Arg	Asp	Cys	Asp		
465					470					475					480		
Val	Ile	Glu	Asp	Ile	Leu	Arg	Ile	Tyr	Gly	Tyr	Asn	Asn	Val	Glu	Ile		
				485					490					495			
Pro	Ser	Thr	Leu	Lys	Ser	Ser	Leu	Thr	Thr	Lys	Gly	Asp	Cys	Asp	Lys		
			500					505									

Asn Thr Ser Val Tyr Glu Leu Lys Ala Tyr Val Glu Asn Ile Phe Lys
 645 650 655
 Arg Leu Gly Leu Asp Leu His Ser Leu Val Val Gly Asn Leu Ser Asp
 660 665 670
 Asp Ile Tyr Ser Thr Ala Leu Thr Val Asn Thr Lys Gly Gly Lys Arg
 675 680 685
 Leu Ala Thr Phe Gly Val Val Thr Lys Lys Met Leu Lys Ala Phe Asp
 690 695 700
 Val Asp Asn Glu Val Tyr Tyr Ala Asp Leu Asn Trp Lys Glu Leu Met
 705 710 715 720
 Lys Ala Ile Arg Ser Val Lys Val Ser Tyr Lys Glu Ile Ser Lys Phe
 725 730 735
 Pro Ala Val Lys Arg Asp Leu Ala Leu Leu Leu Asp Lys Lys Val Gln
 740 745 750
 Phe Ala Glu Ile Glu Lys Ile Ala Tyr Glu Thr Glu Lys Lys Leu Leu
 755 760 765
 Lys Glu Val Ser Leu Phe Asp Val Tyr Glu Gly Lys Asn Leu Glu Ala
 770 775 780
 Gly Lys Lys Ser Tyr Ala Val Ser Phe Leu Leu Gln Asp Glu Ser Gln
 785 790 795 800
 Thr Leu Asn Asp Lys Met Ile Asp Lys Ile Met Ser Lys Leu Val Lys
 805 810 815
 Asn Leu Glu Asp Lys Leu Gly Ala Lys Leu Arg
 820 825

<210> 5813
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 5813
 Ser His Lys Asn Arg Arg Arg Ser Ser Leu Leu Glu Cys Gly Arg Thr
 1 5 10 15
 Ala Met Asp Asp Ile Pro Gly Gly Glu Leu His Gly Val Glu Thr Asp
 20 25 30
 Arg Ile Gly Arg His His Arg Leu His Gly Phe Ser Gln Met Asn Asp
 35 40 45
 Phe Tyr Phe Glu Glu Ser Ser Glu Asp Ile Phe Gly Asn Pro Gly
 50 55 60

<210> 5814
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5814
 Asn Val Lys Asn Lys Leu Met Glu His Ile Ile His Leu Leu Ile Gly
 1 5 10 15
 Phe Ile Val Leu Ser Phe Leu Leu Lys Thr Gly Phe Tyr Pro Arg Trp
 20 25 30
 Gly Ile Trp Leu Ser Ala Leu Val Tyr Thr Val Phe Leu Ile Cys Ile
 35 40 45
 Gly Pro Trp Ala Thr Glu Gln Ser Pro Thr Glu Ile Asn Ser Leu Leu
 50 55 60
 Ala Ser Ala Pro His Ile Leu Thr Leu Ser Val Tyr Val Thr Leu Glu
 65 70 75 80
 Ala Ser Ile Met Ile Ala Phe Cys Phe Asn Cys Phe Ala Asp Thr Ser
 85 90 95
 Lys Gln Arg Thr Leu Phe Gln Arg Thr Val Thr Tyr Ile Leu Asn Phe

Glu Pro Met Glu Leu Met Asp Phe Leu Ala Ala Lys Met Pro Asp Ala
 35 40 45
 Ser Arg Thr Lys Leu Lys Ser Leu Leu Ser Lys Arg Ile Val Leu Val
 50 55 60
 Asp Asn Val Ile Thr Thr Gln Phe Asn Phe Pro Leu Gln Pro Gly Met
 65 70 75 80
 Lys Val Leu Ile Ser Lys Asp Lys Asn Lys Lys Glu Phe Arg His Pro
 85 90 95
 Leu Leu Lys Ile Val Tyr Glu Asp Ala Tyr Ile Ile Val Val Glu Lys
 100 105 110
 Lys Glu Gly Leu Leu Ser Val Gly Thr Glu Arg Gln Lys Glu Arg Thr
 115 120 125
 Ala Gln His Ile Leu Ser Glu Tyr Val Gly Arg Ser Gly Arg Gly Asn
 130 135 140
 Arg Ile Tyr Val Val His Arg Leu Asp Arg Asp Thr Ser Gly Leu Met
 145 150 155 160
 Met Phe Ala Lys Asp Glu Lys Thr Gln Tyr Thr Leu Arg Asp His Trp
 165 170 175
 His Asp Ile Val Thr Asp Arg Arg Tyr Val Ala Val Val Thr Gly Glu
 180 185 190
 Met Glu Lys Asp Ser Asp Thr Val Val Ser Trp Leu Thr Asp Arg Thr
 195 200 205
 Leu Tyr Val Ser Ser Ser Ser Tyr Asp Asp Gly Gly Ser Lys Ser Ile
 210 215 220
 Thr His Tyr Arg Thr Ile Lys Arg Ala Asn Gly Tyr Ser Leu Val Glu
 225 230 235 240
 Leu Arg Leu Glu Thr Gly Arg Lys Asn Gln Ile Arg Val His Met Gln
 245 250 255
 Asp Leu Gly His Pro Leu Ile Gly Asp Gly Arg Tyr Gly Ile Asp Gly
 260 265 270
 Gly Pro Asn Pro Leu Gly Arg Leu Ala Leu His Ala Phe Lys Leu Cys
 275 280 285
 Phe Tyr His Pro Val Thr Asp Gln Leu Met Glu Phe Glu Thr Pro Tyr
 290 295 300
 Pro Pro Thr Phe Lys Lys Leu Phe Leu Lys Lys
 305 310 315

<210> 5817

<211> 601

<212> PRT

<213> B.fragilis

<400> 5817

Lys Tyr Met Lys Thr Ala Ile Ile Val Ile Ser Glu Ala Gly Ile Ala
 1 5 10 15
 Leu Ala Lys Thr Leu Glu Gln Glu Leu Pro Glu Ser Glu Ile Phe Ser
 20 25 30
 Thr Gly Thr Asp Thr Asp Cys His Ser Ile Ser Asn Leu Gln Glu Ala
 35 40 45
 Val Pro Glu Ile Phe His Lys Phe Asp Ala Ile Ile Phe Ile Gly Ala
 50 55 60
 Met Gly Ile Cys Ile Arg Ala Ile Ala Pro His Ile Glu Asp Lys His
 65 70 75 80
 Lys Asp Pro Ala Val Val Cys Val Asp Ser Thr Gly Arg Tyr Ala Val
 85 90 95
 Ser Val Leu Ser Gly His Ile Gly Gly Ala Asn Gly Leu Thr Arg Tyr
 100 105 110
 Val Ala Ser Ile Leu Gly Ala Glu Pro Val Ile Thr Thr Arg Ser Asp
 115 120 125

Arg	Thr	Gly	Leu	Trp	Ala	Leu	Asp	Thr	Leu	Gly	Lys	Lys	Tyr	Gly	Trp
130						135					140				
Gln	Thr	Val	Pro	Ala	Glu	Ser	Ser	Asp	Met	Asn	His	Leu	Ile	Thr	Leu
145					150					155					160
Phe	Val	Asp	Cys	Lys	Pro	Thr	Ala	Leu	Leu	Leu	Asp	Ile	Arg	Asp	Glu
				165					170					175	
Gly	Thr	Thr	Gln	Leu	Glu	His	Thr	Leu	Pro	Pro	His	Val	Asp	Val	Phe
			180					185					190		
Tyr	Lys	Phe	Glu	Asp	Met	Asp	Leu	Arg	Lys	Tyr	Asp	Leu	Leu	Leu	Leu
		195					200					205			
Val	Thr	Pro	Phe	Ile	Tyr	Asn	Thr	Ser	Asp	Thr	Pro	Ala	Leu	Tyr	Tyr
	210					215						220			
Val	Pro	Pro	Val	Leu	His	Met	Gly	Val	Gly	Leu	Ala	Arg	Asp	Ala	His
225					230					235					240
Pro	Val	Asp	Thr	Val	Ile	Thr	His	Leu	Met	Asp	Val	Val	Val	Gln	Ala
				245					250					255	
Asn	Met	Ile	Pro	Leu	Ala	Ile	Arg	Thr	Val	Ser	Ser	Ile	Glu	Glu	Lys
			260					265					270		
Lys	Asp	Glu	Pro	Val	Leu	Lys	Leu	Leu	Ala	Glu	Ala	Tyr	Gln	Thr	Arg
		275					280					285			
Leu	Tyr	Thr	Ala	Ser	Gln	Leu	Ser	Lys	Ile	Glu	Val	Pro	Thr	Pro	Ser
	290					295					300				
Glu	Val	Val	Asn	Lys	His	Met	Gly	Thr	Pro	Ser	Val	Ser	Glu	Ala	Ser
305					310					315					320
Ala	Leu	Leu	Ser	Ser	Gly	Gly	Gly	Pro	Leu	Leu	Leu	Pro	Lys	Gln	Lys
				325					330					335	
Gly	Ala	Asn	Phe	Thr	Val	Ala	Ile	Ala	Met	Asp	Ala	Ala	Ser	Val	Arg
			340					345					350		
Gln	Gly	His	Ile	Glu	Ile	Val	Gly	Ala	Gly	Pro	Gly	Asp	Pro	Glu	Leu
		355					360					365			
Ile	Ser	Val	Arg	Gly	Arg	Arg	Phe	Leu	Glu	Glu	Ala	Asp	Leu	Ile	Leu
	370					375					380				
Tyr	Ala	Gly	Ser	Leu	Val	Pro	Arg	Glu	Leu	Thr	Glu	Cys	Ala	Lys	Ala
385					390					395					400
Gly	Ala	Thr	Ile	Arg	Ser	Ser	Ala	Ser	Met	Thr	Leu	Glu	Glu	Gln	Phe
			405						410					415	
Ala	Leu	Met	Lys	Glu	Phe	Tyr	Asp	Arg	Gly	Gln	Leu	Val	Val	Arg	Leu
			420					425					430		
His	Thr	Gly	Asp	Pro	Cys	Ile	Tyr	Gly	Ala	Ile	Gln	Glu	Gln	Met	Asn
		435					440					445			
Phe	Phe	Asp	Gln	Tyr	Gly	Met	His	Tyr	His	Ile	Thr	Pro	Gly	Ile	Ser
	450					455					460				
Ser	Phe	Gln	Ala	Ala	Ala	Ala	Ala	Leu	Gln	Ser	Gln	Phe	Thr	Ile	Pro
465					470					475					480
Glu	Arg														

595

600

<210> 5818
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 5818
 Gln Asp Met Asn Tyr Leu Glu Ser Glu Ile Ser Ala Leu Tyr Ala Ser
 1 5 10 15
 Ala His Glu Leu Cys Tyr Leu Gly Met Asp Gly Arg Pro Ile Tyr Ser
 20 25 30
 Asp Gln Phe Thr Arg Leu Asn Arg Asp Val Phe Ser Gln Ala Asn Ala
 35 40 45
 Leu Tyr Asp Lys His Gly Asp Ser Asp Glu Glu Glu Ala Arg Leu Cys
 50 55 60
 Leu Ser Leu Leu Met Gly Tyr Asn Ala Thr Leu Tyr Asn Asn Gly Asp
 65 70 75 80
 Lys Glu Glu Arg Ile Gln His Ile Leu Asp Arg Cys Trp Asp Val Leu
 85 90 95
 Glu His Leu Pro Ala Ser Leu Leu Lys Val Gln Leu Leu Val Tyr Cys
 100 105 110
 Tyr Gly Glu Val Phe Asp Glu Glu Leu Ala Arg Glu Ala Gln Ala Ile
 115 120 125
 Ile Asp Thr Trp Gln Asp Arg Glu Leu Ser Glu Asp Glu Arg Glu Val
 130 135 140
 Met Glu Arg Leu Lys Asp Val Gln Glu Asn Pro Tyr Pro Trp Ser Glu
 145 150 155 160
 Val Glu

<210> 5819
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 5819
 Glu Glu Met Lys Gly Tyr Trp Lys Ile Leu Leu Ile Leu Met Leu Ala
 1 5 10 15
 Val Gly Phe Ala Ser Cys Glu Asp Asp Gln Gly Glu Ile Glu Tyr Val
 20 25 30
 Ile Thr Gly Arg Ala Trp Thr Gly Asp Val Gly Met Asn Ala His Asn
 35 40 45
 Gly Glu Pro Leu Phe Ser Thr Phe Glu Phe Gly Asn Asp Gly Phe Gly
 50 55 60
 Val Glu Thr Gln Phe Tyr Ala Ser Asp Gly Leu Leu Tyr Asp Gln Phe
 65 70 75 80
 Arg Phe Gln Trp Tyr Trp Glu Asp Ser Tyr Asn Arg Asn Leu Val Leu
 85 90 95
 Asn Tyr Gly Lys Asn Gly Ile Ser Tyr Met Asp Asp Val Arg Ile Tyr
 100 105 110
 Gly Asp Arg Ile Thr Gly Ala Phe Tyr Leu Ser Asp Asp Ala Arg Gly
 115 120 125
 Phe Asn Phe Glu Leu Arg Met Glu
 130 135

<210> 5820
 <211> 1326
 <212> PRT

<213> B.fragilis

<400> 5820

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Asp Ile Ser Asn Glu Asn Ala Glu Arg Lys Gln Glu Asp Asn Met Lys
1      5      10      15
Val Leu Thr Leu Phe Arg His Lys Arg Thr Leu Tyr Ile Ala Gly Ser
20      25      30
Val Leu Leu Leu Ala Ile Ala Phe Thr Ile Gly Tyr Arg Tyr Trp Met
35      40      45
Ala Pro Thr Arg Ile Leu Ile Val Asn Pro Leu Pro Ala Gln Ala Ala
50      55      60
Asp Ile Val Leu Asn Asn Asp Ser Arg Asn Ile Glu Val Thr Cys Ile
65      70      75      80
Gln Thr Glu Asn Leu Glu Ser Phe Lys Gly Tyr Asp Ala Val Val Leu
85      90      95
Tyr Gly Arg Ser Leu Asn Leu Asn Asp Arg Gln Met Lys Glu Ala Glu
100     105     110
Arg Ala Ala Ser Ala Gly Ile Pro Leu Phe Thr Ile Ser Leu Arg Asn
115     120     125
Phe Asn Thr Ile Ile Asn Arg Asn Ile Thr Pro Glu Gln Glu Ala Met
130     135     140
Leu Met Gln Tyr Phe Gly Asp Ala Cys Arg Gln Asn Tyr Arg Asn Gly
145     150     155     160
Leu Arg Tyr Leu Arg His Ile Ala Thr Pro Thr Arg Trp Asn Ile Glu
165     170     175
Thr Phe Asp Ala Pro Leu Arg Leu Pro Asn Asn Leu Phe Tyr His Gln
180     185     190
Glu Tyr Gly Lys Tyr Phe Glu Thr Gln Lys Ala Leu Glu Gln Tyr Leu
195     200     205
Arg Gln Lys Gly Ile Phe His Glu Asn Gly Pro Lys Ile Ala Phe Ile
210     215     220
Ser Gly Val Ser Phe Pro Met Glu Gly Asn Arg Ala His Val Asp Thr
225     230     235     240
Leu Ile Ser Lys Met Thr Gln Ala Gly Phe Asn Val Tyr Pro Ile Ala
245     250     255
Gly Lys Glu Lys Arg Glu Glu Met Leu Arg Ser Leu His Pro Asp Ala
260     265     270
Leu Val Tyr Leu Pro Met Gly Arg Leu Gly Asp Asp Ser Leu Ile Asn
275     280     285
Trp Leu His Thr Glu Asn Ile Pro Ile Phe Asn Pro Phe Pro Leu Ile
290     295     300
Gln Ser Arg Glu Glu Trp Leu Asp Pro Met Lys Pro Val Ser Gly Gly
305     310     315     320
Thr Leu Thr Ala Arg Val Leu Val Pro Glu Ile Asp Gly Gly Met Thr
325     330     335
Pro Leu Leu Ile Ala Thr Gln Asn Leu His Lys Ser Gly Tyr Tyr Leu
340     345     350
His Glu Pro Glu Met Glu Arg Val Asp Asn Phe Ile Ser His Val His
355     360     365
Lys Tyr Leu Asp Leu Arg Thr Lys Pro Asn Ser Asp Lys Arg Ile Ala
370     375     380
Ile Cys Tyr Phe Lys Thr Pro Gly Lys Asp Ala Leu Leu Ala Ser Gly
385     390     395     400
Met Glu Val Ile Pro Ser Leu Tyr Asn Phe Leu Lys Arg Leu Arg Thr
405     410     415
Glu Gly Tyr Asp Val Ser Gly Leu Pro Ala Thr Val Glu Glu Phe Gly
420     425     430
Lys Gln Ile Tyr Arg Asp Gly Ala Val Met Gly Ser Tyr Ala Thr Gly
435     440     445

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Ala	Gln	Glu	Lys	Phe	Leu	Gln	Thr	Ala	His	Pro	Val	Trp	Leu	Thr	Lys
450						455					460				
Thr	Gln	Tyr	Glu	Lys	Trp	Val	His	Glu	Val	Ile	Glu	Pro	Asp	Lys	Tyr
465					470					475					480
Lys	Glu	Val	Thr	Glu	Arg	Tyr	Gly	Asp	Ala	Pro	Gly	His	Leu	Leu	Thr
				485					490					495	
Gly	Thr	Asn	Pro	Gln	Gly	Glu	Ala	Gln	Leu	Ala	Ile	Ala	Cys	Leu	Arg
			500					505					510		
Phe	Gly	Asn	Ile	Leu	Leu	Phe	Pro	Gln	Pro	Arg	Pro	Ala	Leu	Gly	Asp
		515					520					525			
Asp	Asp	Phe	Lys	Leu	Val	His	Gly	Met	Pro	Val	Ala	Pro	Pro	His	Ser
	530					535					540				
Tyr	Leu	Ala	Pro	Tyr	Leu	Tyr	Val	Gln	Lys	Gly	Phe	Gln	Ala	Asp	Ala
545					550					555					560
Leu	Ile	His	Phe	Gly	Thr	His	Gly	Asn	Leu	Glu	Tyr	Thr	Pro	Gly	Lys
				565					570					575	
Asn	Val	Ala	Leu	Ser	His	Asn	Asp	Trp	Ala	Asp	Ala	Leu	Val	Gly	Asp
			580					585					590		
Leu	Pro	His	Phe	Tyr	Tyr	Tyr	Thr	Thr	Gly	Asn	Val	Gly	Glu	Gly	Ile
		595					600					605			
Ile	Ala	Lys	Arg	Arg	Thr	His	Ala	Val	Leu	Val	Thr	His	Leu	Thr	Pro
	610					615					620				
Pro	Tyr	Val	Glu	Ser	Gly	Met	Arg	Gln	Arg	Tyr	Thr	Ser	Leu	Leu	Glu
625					630					635					640
Asp	Ile	His	Lys	Ile	Leu	Ser	Glu	Asp	Ile	Glu	Lys	Asn	Arg	Thr	Leu
				645					650					655	
Gly	Ile	Arg	Ile	Lys	Lys	Glu	Val	Ile	Lys	Leu	Gly	Leu	His	Arg	Asp
			660					665					670		
Leu	Lys	Leu	Asp	Ser	Val	Ser	Ser	Arg	Pro	Tyr	Thr	Ala	Glu	Glu	Leu
		675					680					685			
Glu	Arg	Ile	Asp	Leu	Phe	Ala	Glu	Glu	Ile	Ala	Asn	Glu	Lys	Thr	Ile
	690					695					700				
Gly	Ala	Tyr	Tyr	Thr	Leu	Gly	Glu	Thr	Tyr	Ser	Ala	Arg	Asp	Leu	Leu
705					710					715					720
Thr	Thr	Thr	Leu	Ala	Val	Ser	Ala	Asp	Pro	Leu	Ala	Tyr	Gln	Met	Ala
				725					730					735	
Lys	Arg	Asp	Arg	Asp	Lys	Gly	Lys	Ile	Thr	Thr	Glu	Gln	Leu	Gln	Asp
		740						745					750		
Phe	Gly	Tyr	Ile	Thr	His	His	Tyr	Leu	Pro	Ile	Ala	Lys	Gln	Arg	Leu
		755					760					765			
Ile	Pro	Leu	Leu	Gln	Asn	Pro	Pro	Lys	Asp	Thr	Thr	Gly	Ile	Ala	Pro
	770					775						780			
Glu	Leu	Gln	Glu	Ala	Leu	Arg	Tyr	His	Ala	Leu	Leu	Val	Ser	Ser	Thr
785					790					795					800
Gly	Asn	Glu	Leu	Asn	Ala	Met	Leu	Arg	Gly	Leu	Lys	Gly	Gly	Thr	Val
				805					810					815	
Phe	Pro	Ala	Pro	Gly	Gly	Asp	Pro	Val	Leu	Asn	Pro	Asn	Val	Leu	Pro
		820						825					830		
Thr	Gly	Arg	Asn	Met	Tyr	Ser	Ile	Asn	Val	Glu	Thr	Thr	Pro	Gly	Ile
		835					840					845			
Leu	Ser	Trp	Glu	Glu	Gly	Lys	Arg	Leu	Ala	Glu	Ala	Thr	Leu	Lys	Ala
	850					855					860				
Tyr	Arg	Glu	Asn	His	Ser	Gly	Lys	Tyr	Pro	Arg	Lys	Val	Ser	Tyr	Ser
865					870					875					880
Phe	Trp	Ala	Gly	Glu	Phe	Ile	Thr	Thr	Glu	Gly	Ala	Thr	Leu	Ala	Gln
				885					890					895	
Val	Phe	Trp	Met	Leu	Gly	Val	Glu	Pro	Val	Arg	Asp	Lys	Met	Gly	Arg
			900					905					910		
Val	Val	Asp	Leu	Arg	Leu	Val	Pro	Ser	Ser	Glu	Leu	Gly	Arg	Pro	Arg

915	920	925
Val Asn Val Val Val Gln Val Ser Gly Gln Leu Arg Asp Ile Ala Gly		
930	935	940
Ser Arg Leu Thr Met Leu Thr Asp Ala Val Arg Leu Val Ser Ala Ala		
945	950	955
Asp Asp Lys Ala Tyr Pro Asn Tyr Val Ser Ser Gly Thr Arg Leu Gln		
965	970	975
Glu Lys Leu Leu Val Glu Lys Gly Val Ser Pro Lys Arg Ala Arg Glu		
980	985	990
Met Ser Val Met Arg Val Phe Gly Pro Val Asn Ser Gly Tyr Ser Thr		
995	1000	1005
Gly Met Met Ala Tyr Thr Glu Lys Ser Asp Arg Trp Asp His Glu Ser		
1010	1015	1020
Glu Leu Val Asp Gly Tyr Leu Asn Asn Met Gly Ala Ala Tyr Gly Asp		
1025	1030	1035
Glu Glu Asp Trp Gly Gly Met Gln Lys Asp Leu Phe Ala Ser Ala Leu		
1045	1050	1055
Ser Glu Thr Asp Val Val Ile Gln Pro Arg Gln Ser Asn Thr Trp Gly		
1060	1065	1070
Pro Leu Ser Leu Asp His Val Tyr Glu Phe Met Gly Gly Leu Ser Leu		
1075	1080	1085
Thr Val Lys Thr Leu Thr Gly Lys Glu Pro Asp Ala Leu Met Ala Asp		
1090	1095	1100
Tyr Arg Asn Arg Asn Asn Lys Arg Met Gln Asn Ile Asn Glu Ala Ile		
1105	1110	1115
Ala Val Glu Ala Arg Ala Thr Val Leu Asn Pro Thr Phe Val Lys Glu		
1125	1130	1135
Arg Met Lys Gly Gly Ala Thr Thr Ala Gln Met Phe Gly Glu Ile Phe		
1140	1145	1150
Arg Asn Ile Phe Gly Trp His Ala Thr Arg Pro Ser Ala Met Asp Lys		
1155	1160	1165
Glu Ile Phe Asn Asp Leu Tyr Lys Met Tyr Ile Val Asp Glu Asn His		
1170	1175	1180
Leu Gly Ile Arg Asp Tyr Phe Gln Arg Ile Asn Pro Ala Ser Tyr Gln		
1185	1190	1195
Ala Met Thr Ser Val Met Leu Glu Ser Ala Arg Lys Gly Tyr Trp Lys		
1205	1210	1215
Ala Ser Asp Glu Gln Leu Lys Val Thr Ala Arg Leu His Ala Gln Ile		
1220	1225	1230
Thr Arg Glu Ala Gly Ala Ala Cys Thr Glu Phe Val Cys Asp Asn Arg		
1235	1240	1245
Lys Leu Gln Gln Phe Val Glu Gly His Leu Asp Asn Asn Asp Ser Glu		
1250	1255	1260
Ser Tyr Arg Leu Val Met Gln Glu Val His Gln Ala Gly Asn Glu Lys		
1265	1270	1275
Gly Lys Asp Ile Val Leu Lys Glu Glu Lys Leu Thr Lys Thr Glu Asn		
1285	1290	1295
Arg Lys Lys Asn Val Val Asn Gly Ile Leu Thr Gly Val Ile Val Leu		
1300	1305	1310
Leu Ala Phe Gly Gly Val Ile Tyr Leu Leu Lys Arg Lys Lys		
1315	1320	1325

<210> 5821

<211> 173

<212> PRT

<213> B.fragilis

<400> 5821

Leu Val Ala Asp Lys Asp Thr Phe Leu Ile Phe Leu Gln Glu Ile Lys

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1           5           10           15
Lys Tyr Lys Met Thr Lys Glu Glu Arg Ile Ser Arg Ala Thr Glu Leu
20           25           30
Phe Lys Ser Gly Tyr Asn Cys Ser Gln Ser Val Val Ala Ala Phe Ala
35           40           45
Asp Met Tyr Gly Phe Thr Glu Glu Gln Ala Leu Arg Met Ala Ala Ser
50           55           60
Phe Gly Gly Gly Ile Gly Arg Met Arg Glu Thr Cys Gly Ala Ala Cys
65           70           75           80
Gly Met Phe Leu Leu Ala Gly Leu Glu Lys Gly Ala Ile Asp Gly Ala
85           90           95
Asp Arg Glu Gly Lys Ala Ala Asn Tyr Ala Leu Val Gln Glu Leu Ala
100          105          110
Ala Glu Phe Lys Lys Arg Asn Gly Ser Leu Asn Cys Gly Glu Leu Leu
115          120          125
Gly Leu Lys Lys Lys Ala Pro Val Ser Ser Glu Pro Glu Ala Arg Thr
130          135          140
Glu Gln Tyr Tyr Ala Lys Arg Pro Cys Ser Lys Met Val Glu Glu Ala
145          150          155          160
Ala Arg Ile Trp Ala Glu Tyr Leu Glu Lys Glu Lys Lys
165          170

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<210> 5822

<211> 95

<212> PRT

<213> B.fragilis

<400> 5822

```

Ala Glu Asn Glu Thr Arg Thr Arg Asp Pro Asn Leu Gly Lys Val Met
1           5           10           15
Leu Tyr Gln Leu Ser Tyr Phe Arg Asn Val Val Pro Arg Thr Gly Leu
20           25           30
Glu Pro Ala Cys Leu Ser Thr His Ala Pro Glu Thr Cys Ala Ser Thr
35           40           45
Asn Ser Ala Thr Trp Ala Leu Thr Asn Gln Lys Pro Ala Val Lys Lys
50           55           60
Asn Gly Glu Glu Gln Ile Thr Asp Val Leu Val Glu Arg Lys Thr Arg
65           70           75           80
Leu Glu Leu Ala Thr Leu Thr Leu Ala Arg Leu Cys Ser Thr Asn
85           90           95

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<210> 5823

<211> 603

<212> PRT

<213> B.fragilis

<400> 5823

```

Arg Ile Lys Asp Asn Val Asn Asn Val Tyr Asn Asp Thr Arg Ile Asp
1           5           10           15
Arg Leu Thr Lys His Phe Leu Ala Gln Ala Val Phe Asn Glu Lys Leu
20           25           30
Asn Leu Asn Lys Leu Thr Met Asp Trp Ile Val His Gln Leu Arg Val
35           40           45
His Pro Glu Leu Ala Ile Phe Leu Thr Leu Phe Val Gly Phe Trp Ile
50           55           60
Gly Lys Ile Lys Ile Gly Lys Phe Ser Leu Gly Val Val Thr Ser Val
65           70           75           80
Leu Leu Val Gly Val Leu Val Gly Gln Leu Asp Ile Thr Val Asp Gly
85           90           95

```


			565				570				575			
Pro	Ala	Leu	Gly	Tyr	Thr	Val	Thr	Tyr	Ala	Val	Gly	Asn	Thr	Leu
			580					585				590		
Ile	Ile	Trp	Gly	Val	Val	Ile	Val	Leu	Leu	Met				
			595				600							

<210> 5824
 <211> 595
 <212> PRT
 <213> B.fragilis

<400> 5824

Tyr	Gln	Met	Asp	Lys	Ile	Arg	Asn	Phe	Cys	Ile	Ile	Ala	His	Ile	Asp
1				5				10					15		
His	Gly	Lys	Ser	Thr	Leu	Ala	Asp	Arg	Leu	Leu	Glu	Phe	Thr	Asn	Thr
			20					25					30		
Ile	Gln	Val	Thr	Glu	Gly	Gln	Met	Leu	Asp	Asp	Met	Asp	Leu	Glu	Lys
		35					40					45			
Glu	Arg	Gly	Ile	Thr	Ile	Lys	Ser	His	Ala	Ile	Gln	Met	Glu	Tyr	Thr
	50					55					60				
Tyr	Lys	Gly	Glu	Lys	Tyr	Ile	Leu	Asn	Leu	Ile	Asp	Thr	Pro	Gly	His
65					70					75					80
Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Ile	Ala	Ala	Cys	Glu	Gly
				85					90					95	
Ala	Leu	Leu	Ile	Val	Asp	Ala	Ser	Gln	Gly	Val	Gln	Ala	Gln	Thr	Ile
			100					105					110		
Ser	Asn	Leu	Tyr	Met	Ala	Ile	Glu	His	Asp	Leu	Glu	Ile	Ile	Pro	Ile
		115					120					125			
Ile	Asn	Lys	Cys	Asp	Met	Ala	Ser	Ala	Met	Pro	Glu	Glu	Val	Glu	Asp
	130					135					140				
Glu	Ile	Val	Glu	Leu	Leu	Gly	Cys	Lys	Arg	Asp	Glu	Ile	Ile	Arg	Ala
145					150					155					160
Ser	Gly	Lys	Thr	Gly	Met	Gly	Val	Glu	Glu	Ile	Leu	Ala	Ala	Val	Ile
			165						170					175	
Glu	Arg	Ile	Pro	His	Pro	Gln	Gly	Asp	Glu	Ser	Ala	Pro	Leu	Gln	Ala
		180						185					190		
Leu	Ile	Phe	Asp	Ser	Val	Phe	Asn	Ser	Phe	Arg	Gly	Ile	Ile	Ala	Tyr
	195						200					205			
Phe	Lys	Ile	Thr	Asn	Gly	Val	Ile	Arg	Ala	Gly	Asp	Lys	Val	Lys	Phe
	210					215					220				
Phe	Asn	Thr	Gly	Lys	Glu	Tyr	Val	Ala	Asp	Glu	Ile	Gly	Val	Leu	Lys
225					230					235					240
Met	Glu	Met	Val	Pro	Arg	Lys	Glu	Leu	Arg	Thr	Gly	Asp	Val	Gly	Tyr
			245						250					255	
Ile	Ile	Ser	Gly	Ile	Lys	Thr	Ser	Lys	Glu	Val	Lys	Val	Gly	Asp	Thr
		260						265					270		
Ile	Thr	His	Val	Ala	Arg	Pro	Cys	Asp	Lys	Ala	Ile	Ala	Gly	Phe	Glu
	275						280					285			
Glu	Val	Lys	Pro	Met	Val	Phe	Ala	Gly	Val	Tyr	Pro	Ile	Glu	Ala	Glu
	290					295					300				
Glu	Phe	Glu	Asp	Leu	Arg	Ala	Ser	Leu	Glu	Lys	Leu	Gln	Leu	Asn	Asp
305					310					315				320	
Ala	Ser	Leu	Thr	Phe	Gln	Pro	Glu	Ser	Ser	Leu	Ala	Leu	Gly	Phe	Gly
			325						330					335	
Phe	Arg	Cys	Gly	Phe	Leu	Gly	Leu	Leu	His	Met	Glu	Ile	Val	Gln	Glu
		340						345					350		
Arg	Leu	Asp	Arg	Glu	Phe	Asp	Met	Asn	Val	Ile	Thr	Thr	Val	Pro	Asn
	355						360					365			
Val	Ser	Tyr	His	Ile	Tyr	Asp	Lys	Gln	Gly	Asn	Met	Thr	Glu	Val	His

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      370                      375                      380
Asn Pro Gly Gly Met Pro Asp Pro Thr Met Ile Asp His Ile Glu Glu
385                      390                      395                      400
Pro Tyr Ile Lys Ala Ser Ile Ile Thr Thr Thr Asp Tyr Ile Gly Pro
      405                      410                      415
Ile Met Thr Leu Cys Leu Gly Lys Arg Gly Glu Leu Leu Lys Gln Glu
      420                      425                      430
Tyr Ile Ser Gly Asn Arg Val Glu Leu Phe Tyr Asn Met Pro Leu Gly
      435                      440                      445
Glu Ile Val Ile Asp Phe Tyr Asp Arg Leu Lys Ser Ile Ser Lys Gly
      450                      455                      460
Tyr Ala Ser Phe Asp Tyr His Pro Asp Gly Phe Arg Pro Ser Lys Leu
465                      470                      475                      480
Val Lys Leu Asp Ile Leu Leu Asn Gly Glu Ser Val Asp Ala Leu Ser
      485                      490                      495
Thr Leu Thr His Phe Asp Asn Ala Tyr Asp Met Gly Arg Arg Met Cys
      500                      505                      510
Glu Lys Leu Lys Glu Leu Ile Pro Arg Gln Gln Phe Glu Ile Ala Ile
      515                      520                      525
Gln Ala Ala Ile Gly Ala Lys Ile Ile Ala Arg Glu Thr Ile Lys Ala
      530                      535                      540
Val Arg Lys Asp Val Thr Ala Lys Cys Tyr Gly Gly Asp Ile Ser Arg
545                      550                      555                      560
Lys Arg Lys Leu Leu Glu Lys Gln Lys Lys Gly Lys Lys Arg Met Lys
      565                      570                      575
Gln Ile Gly Asn Val Glu Val Pro Gln Lys Ala Phe Leu Ala Val Leu
      580                      585                      590
Lys Leu Asp
      595

<210> 5825
<211> 238
<212> PRT
<213> B.fragilis

<400> 5825
Asn Lys Arg Glu Phe Met Glu Arg Tyr Ser Arg Gln Thr Met Leu Pro
1      5      10      15
Glu Ile Gly Glu Ala Gly Gln Leu Lys Leu Lys Ala Ala Lys Val Leu
      20      25      30
Ile Val Gly Val Gly Gly Leu Gly Ser Pro Ile Ala Leu Tyr Leu Ala
      35      40      45
Gly Ala Gly Val Gly Thr Ile Gly Leu Ala Asp Asp Asp Glu Val Ser
      50      55      60
Leu Ser Asn Leu Gln Arg Gln Ile Leu Tyr Thr Glu Glu Glu Val Gly
65      70      75      80
Asp Leu Lys Ala Ile Cys Ala Ser Met Arg Ile Ser Ala Leu Asn Arg
      85      90      95
Glu Ile Lys Val Asn Ala Cys Pro Gly Arg Leu Ser Lys Glu Asn Ala
      100     105     110
Arg Asp Leu Ile Gly Gln Tyr Asp Ile Ile Val Asp Gly Cys Asp Asn
      115     120     125
Phe Ala Thr Arg Tyr Leu Leu Ser Asp Val Cys Ser Glu Leu Gly Lys
130     135     140
Pro Tyr Val Tyr Gly Ala Ile Cys Gly Phe Glu Gly Gln Val Ser Val
145     150     155     160
Phe Asn Tyr Gly Glu Gly Thr Gln Arg Lys Thr Tyr Arg Asp Leu Tyr
      165     170     175
Pro Asp Glu Glu Gly Met Leu His Met Pro Pro Pro Pro Lys Gly Val

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<210> 5826
<211> 148
<212> PRT
<213> B.fragilis
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<210> 5827
<211> 592
<212> PRT
<213> B.fragilis
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<400> 5827																
Met	Pro	Val	Trp	Ser	Ile	Leu	Ser	Leu	Ile	Ile	Lys	Asn	Asn	Met	Lys	
1				5					10					15		
Val	Ser	Asp	Tyr	Ile	Ile	Ser	Tyr	Ile	Glu	Ser	Arg	Gly	Val	His	Val	
			20					25					30			
Ile	Phe	Gly	Tyr	Ile	Gly	Gly	Met	Ile	Thr	His	Leu	Val	Asp	Ser	Val	
		35					40						45			
Ser	Gln	Asn	Pro	Asn	Met	Gln	Phe	Ile	Gln	Thr	Tyr	His	Glu	Gln	Thr	
	50					55					60					
Ala	Ala	Ile	Ala	Ala	Glu	Gly	Phe	Ala	Lys	Glu	Ser	Gly	Leu	Phe	Gly	
65					70					75					80	
Val	Ala	Ile	Ser	Thr	Ser	Gly	Pro	Gly	Ala	Thr	Asn	Met	Met	Thr	Gly	
				85					90					95		
Ile	Ala	Asp	Ala	Tyr	Phe	Asp	Ser	Ile	Pro	Val	Leu	Tyr	Ile	Thr	Gly	
		100						105					110			
Gln	Val	Asn	Thr	Tyr	Glu	Tyr	Lys	Tyr	Asp	Lys	Pro	Val	Arg	Gln	Gln	
		115					120					125				
Gly	Phe	Gln	Glu	Thr	Asp	Ile	Val	Ser	Met	Val	Lys	Ser	Val	Thr	Lys	
	130					135					140					

Tyr Ala Lys Leu Ile Asp Lys Ala Glu Asp Ile Lys Tyr Glu Leu Asp
 145 150 155 160
 Lys Ala Leu Tyr Ile Ala Leu Ser Gly Arg Lys Gly Pro Val Leu Leu
 165 170 175
 Asp Leu Pro Met Asp Ile Gln Arg Glu Glu Ile Asn Gln Glu Thr Leu
 180 185 190
 Ile Gly Tyr Ser Gly Glu Ser Ile Leu Asn Asn Pro Leu Ile Ala Trp
 195 200 205
 Glu Glu Ile Arg Leu Leu Met Glu Ser Ser His Arg Pro Met Leu Leu
 210 215 220
 Leu Gly Ala Gly Cys Cys Asn Ser Asp Met Val Leu Leu Asn Asp Phe
 225 230 235 240
 Ile Arg Arg His His Phe Pro Val Ile Thr Ser Leu Met Gly Arg Gly
 245 250 255
 Ala Ile Asp Glu Thr Tyr Asp Asn Tyr Ile Gly Met Ile Gly Ser Tyr
 260 265 270
 Gly Asn Arg Cys Ala Asn Met Gly Val Ala Asn Ala Asp Leu Leu Ile
 275 280 285
 Ala Leu Gly Thr Arg Leu Asp Thr Arg Gln Thr Gly Ala Arg Leu Asp
 290 295 300
 Gln Phe Leu Ser Asn Gly His Ile Ile His Val Asp Ile Asp Asp Asn
 305 310 315 320
 Glu Leu Glu Tyr His Arg Leu Leu Asn Arg Lys Lys Val Asn Cys Thr
 325 330 335
 Ile Asp Cys Phe Leu Gln Lys Glu Lys Glu Met Pro Ile Ser Leu Gly
 340 345 350
 Asp Ile Ser Glu Trp Asn Phe Phe Leu His Gly Leu Lys Gln Arg Tyr
 355 360 365
 Gly Gln Asp Ala Glu Ile Glu Arg Phe Val Glu Asn Lys Ser Pro Tyr
 370 375 380
 Arg Phe Met Gln Tyr Phe Asp Ser Leu Thr Gln Thr Asp Asp Val Ile
 385 390 395 400
 Cys Ala Asp Ile Gly Gln Asn Gln Met Trp Ala Ala Gln Thr Leu Arg
 405 410 415
 Leu Lys Ser Gly Gln Lys Phe Val Thr Ser Gly Gly Leu Ala Pro Met
 420 425 430
 Gly Phe Ser Leu Pro Val Ala Ile Gly Cys Ser Phe Ala Asn Pro Asn
 435 440 445
 Lys Lys Val Phe Ser Ile Asn Gly Asp Gly Gly Phe His Met Ala Ile
 450 455 460
 Gln Ser Leu Met Leu Ile Ser Gln Tyr Asn Leu Pro Ile Lys Val Ile
 465 470 475 480
 Ile Leu Asn Asn Ala Ser Leu Gly Met Ile Thr Gln Phe Gln His Leu
 485 490 495
 Tyr Phe Asp Asp Arg Met Cys Gly Thr Thr Leu Asn Gly Gly Tyr Arg
 500 505 510
 Val Pro Asp Ile Lys Ser Leu Ser Thr Ala Tyr Gly Leu Pro Tyr Phe
 515 520 525
 Arg Leu Thr Val Asp Arg Leu Asp Asp Pro Asp Leu Arg Glu Glu Met
 530 535 540
 Gln Ala Ala His Asn Cys Ile Ile Glu Cys Val Val Glu Gly Leu Thr
 545 550 555 560
 Ser Val Ser Pro Lys Leu Glu Tyr Asp Lys Pro Ile Ser Lys Pro Leu
 565 570 575
 Pro Leu Leu Pro Glu Glu Glu Tyr Lys Glu Asn Met Leu Leu Glu Ala
 580 585 590

<210> 5828

<211> 262

<212> PRT

<213> B.fragilis

<400> 5828

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Arg Ala Val Trp Lys His Ala Lys Phe Ser Lys Ser Phe Val Asp Ser
1      5      10      15
Glu Arg Ser Trp Gln Ala Asn Tyr Gly Gln Leu Thr Cys Gly His Cys
20     25     30
Asn Leu Thr Tyr Phe His Tyr Lys Gly Trp Phe Leu Ile Lys Leu Ile
35     40     45
Ser Asn Phe Ala Lys Leu Asn Ser Leu Thr Lys Glu Met Lys Leu Ile
50     55     60
Val Val Thr Thr Pro Thr Phe Phe Val Glu Glu Asp Lys Ile Ile Thr
65     70     75     80
Ala Leu Phe Glu Glu Gly Leu Asp Ile Leu His Leu Arg Lys Pro Glu
85     90     95
Thr Pro Ala Met Tyr Ser Glu Arg Leu Leu Thr Leu Ile Pro Glu Lys
100    105    110
Tyr His Lys Arg Ile Val Thr His Glu His Phe Tyr Leu Lys Glu Glu
115    120    125
Phe Asn Leu Met Gly Ile His Leu Asn Ala Arg Asn Pro Lys Glu Pro
130    135    140
His Asp Tyr Ser Gly His Ile Ser Cys Ser Cys His Ser Val Glu Glu
145    150    155    160
Val Lys Asn Lys Lys His Phe Tyr Asp Tyr Val Phe Met Ser Pro Val
165    170    175
Tyr Asp Ser Ile Ser Lys Glu Gly Tyr Asn Ser Pro Tyr Thr Ala Glu
180    185    190
Glu Leu Arg Leu Ala Ala Lys Asp Lys Ile Ile Asp Asn Lys Val Met
195    200    205
Ala Leu Gly Gly Ile Thr Pro Asp Asn Ile Leu Glu Val Lys Asp Phe
210    215    220
Gly Phe Gly Gly Ala Val Val Leu Gly Asp Leu Trp Gly Lys Phe Asp
225    230    235    240
Ala Cys Ser Asp Gln Asp Tyr Leu Ala Val Ile Glu His Phe Lys Lys
245    250    255
Leu Lys Arg Met Ala Asp
260

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<210> 5829

<211> 109

<212> PRT

<213> B.fragilis

<400> 5829

```

Ser Met Ala Arg Asn Lys Leu Leu His Asn Gln Asn Asp Thr Asp Pro
1      5      10      15
Met Gly Thr Val Ala Asn Leu Phe Asp Val Ala Met Val Phe Ala Val
20     25     30
Ala Leu Met Val Ala Leu Val Ser Arg Phe Asn Met Thr Glu Ile Phe
35     40     45
Ser Lys Glu Asp Tyr Thr Met Val Lys Asn Pro Gly Gln Glu Asn Met
50     55     60
Glu Ile Ile Thr Lys Glu Gly Lys Glu Ile Lys Arg Tyr Thr Pro Ser
65     70     75     80
Glu Gln Lys Glu Ser Ser Gly Lys Arg Gly Lys Lys Val Gly Val Ala
85     90     95
Tyr Glu Leu Glu Asn Gly Lys Ile Ile Tyr Val Pro Glu
100    105

```

<210> 5830
 <211> 307
 <212> PRT
 <213> B.fragilis

<400> 5830

```

Phe Arg Ser Ser Asn Leu Ile Leu Ile Ser Ile Leu Met Lys Gly Ile
1      5      10      15
Val Leu Ala Gly Gly Ser Gly Thr Arg Leu Tyr Pro Ile Thr Lys Gly
20      25      30
Val Ser Lys Gln Leu Leu Pro Ile Phe Asp Lys Pro Met Ile Tyr Tyr
35      40      45
Pro Ile Ser Val Leu Met Leu Ala Gly Ile Arg Glu Ile Leu Ile Ile
50      55      60
Ser Thr Pro Tyr Asp Leu Pro Gly Phe Gln Arg Leu Leu Gly Asp Gly
65      70      75      80
Ser Asp Phe Gly Val Arg Phe Glu Tyr Ala Glu Gln Pro Ser Pro Asp
85      90      95
Gly Leu Ala Gln Ala Phe Ile Ile Gly Glu Lys Phe Ile Gly Gly Asp
100     105     110
Ser Val Cys Leu Val Leu Gly Asp Asn Ile Phe Tyr Gly Gln Ser Phe
115     120     125
Thr Arg Met Leu Arg Glu Ala Val His Thr Ala Lys Ser Glu Asn Lys
130     135     140
Ala Thr Val Phe Gly Tyr Trp Val Ser Asp Pro Glu Arg Tyr Gly Val
145     150     155     160
Ala Glu Phe Asp Lys Ala Gly Asn Val Leu Ser Ile Glu Glu Lys Pro
165     170     175
Thr Val Pro Lys Ser Asn Tyr Ala Val Val Gly Leu Tyr Phe Tyr Pro
180     185     190
Asn Lys Val Val Glu Val Ala Lys Ser Ile Gln Pro Ser Pro Arg Gly
195     200     205
Glu Leu Glu Ile Thr Thr Val Asn Gln Arg Phe Leu Ser Asp Arg Glu
210     215     220
Leu Lys Val Gln Leu Leu Gly Arg Gly Phe Ala Trp Leu Asp Thr Gly
225     230     235     240
Thr His Asp Ser Leu Ser Glu Ala Ser Thr Phe Ile Glu Val Ile Glu
245     250     255
Lys Arg Gln Gly Leu Lys Val Ala Cys Leu Glu Gly Ile Ala Leu Arg
260     265     270
Gln Gly Trp Ile Ser Pro Glu Glu Met Lys Ala Leu Ala Gly Pro Met
275     280     285
Leu Lys Asn Gln Tyr Gly Gln Tyr Leu Leu Lys Val Ile Asp Glu Leu
290     295     300
Ser Ile Lys
305

```

<210> 5831
 <211> 478
 <212> PRT
 <213> B.fragilis

<400> 5831

```

Tyr Asn Ser Arg Ser Thr Val Ala Arg Lys Lys Lys Glu Leu Pro Leu
1      5      10      15
Leu Glu Lys Val Thr Ile Thr Asp Val Ala Ala Glu Gly Lys Ala Ile
20      25      30
Ala Lys Val Asp Asp Leu Val Val Phe Val Pro Tyr Val Val Pro Gly

```

35	40	45
Asp Val Val Asp Leu Gln Val Lys Arg Lys Lys Asn Lys Tyr Ala Glu		
50	55	60
Ala Glu Ala Val Lys Phe His Glu Leu Ser Pro Val Arg Ala Val Pro		
65	70	75
Phe Cys Gln His Tyr Gly Val Cys Gly Gly Cys Lys Trp Gln Val Leu		
85	90	95
Pro Tyr Ala Glu Gln Ile Lys Tyr Lys Gln Lys Gln Val Glu Asp Asn		
100	105	110
Leu Arg Arg Ile Gly Lys Ile Glu Leu Pro Glu Ile Ser Pro Ile Leu		
115	120	125
Gly Ser Ala Lys Thr Glu Phe Tyr Arg Asn Lys Leu Glu Phe Thr Phe		
130	135	140
Ser Asn Lys Arg Trp Leu Thr Ala Glu Glu Val Lys Gln Asp Val Lys		
145	150	155
Tyr Asp Gln Met Asn Ala Val Gly Phe His Ile Pro Gly Ala Phe Asp		
165	170	175
Lys Val Leu Ala Ile Glu Lys Cys Trp Leu Gln Asp Asp Ile Ser Asn		
180	185	190
Arg Ile Arg Asn Thr Ile Arg Asp Tyr Ala Tyr Glu His Asn Tyr Ser		
195	200	205
Phe Ile Asn Leu Arg Ser Gln Glu Gly Met Leu Arg Asn Met Ile Val		
210	215	220
Arg Thr Ser Ser Thr Gly Glu Leu Met Val Ile Leu Ile Cys Lys Ile		
225	230	235
Thr Glu Glu His Glu Met Asp Leu Phe Lys Gln Leu Leu Gln Tyr Val		
245	250	255
Ala Asp Gln Phe Pro Glu Ile Thr Ser Leu Leu Tyr Ile Ile Asn Asn		
260	265	270
Lys Cys Asn Asp Thr Ile Asn Asp Leu Asp Val His Val Phe Arg Gly		
275	280	285
Asn Asp His Ile Phe Glu Glu Met Glu Gly Leu Arg Phe Lys Val Gly		
290	295	300
Pro Lys Ser Phe Tyr Gln Thr Asn Ser Glu Gln Ala Tyr Asn Leu Tyr		
305	310	315
Lys Val Ala Arg Asp Phe Ala Gly Leu Thr Gly Asp Glu Leu Val Tyr		
325	330	335
Asp Leu Tyr Thr Gly Thr Gly Thr Ile Ala Asn Phe Val Ser Arg Gln		
340	345	350
Ala Gln Lys Val Ile Gly Ile Glu Tyr Val Pro Glu Ala Ile Glu Asp		
355	360	365
Ala Lys Val Asn Ala Glu Ile Asn Gly Ile Glu Asn Thr Leu Phe Phe		
370	375	380
Ala Gly Asp Met Lys Asp Ile Leu Thr Gln Asp Phe Ile Asn Gln Tyr		
385	390	395
Gly Arg Pro Asp Val Ile Ile Thr Asp Pro Pro Arg Ala Gly Met His		
405	410	415
Gln Asp Val Val Asp Val Ile Leu Phe Ala Glu Pro Lys Arg Ile Val		
420	425	430
Tyr Val Ser Cys Asn Pro Ala Thr Gln Ala Arg Asp Leu Gln Leu Leu		
435	440	445
Asp Val Lys Tyr Arg Val Lys Ala Val Gln Pro Val Asp Met Phe Pro		
450	455	460
His Thr His His Val Glu Asn Val Val Leu Leu Glu Leu Lys		
465	470	475

<210> 5832

<211> 168

<212> PRT

<213> B.fragilis

<400> 5832

```

Tyr Asn Pro Ser Ser Asn Thr Arg Phe Ile Ala Phe Ile Glu Tyr Asn
1          5          10          15
Tyr Gln Asn Met Lys Phe Asn Arg Lys Glu Lys Thr Phe Ile Met Lys
          20          25          30
Lys Thr Tyr Leu Trp Thr Ala Met Leu Cys Thr Ala Ile Ala Phe Ser
          35          40          45
Ala Cys Lys Ser Asn Lys Ala Gly Gln Asp Thr Ala Ser Glu Ala Lys
          50          55          60
Thr Glu Glu Ala Val Ile Pro Gly Ser Asp Lys Asp Glu His Gly Cys
65          70          75          80
Val Gly Ser Ala Gly Tyr Val Trp Ser Glu Val Lys Lys Asp Cys Ile
          85          90          95
Arg Pro Phe Glu Ala Gly Leu Lys Ile Ser Glu Thr Gln Lys Asp Asn
          100          105          110
Ala Thr Tyr Ala Thr Tyr Ile Val Phe Ala Ala Asp Ser Val Gln Ala
          115          120          125
Glu Leu Tyr Thr Pro Glu Ser Glu Gly Ser Ile Leu Leu Glu Arg Ala
          130          135          140
Asp Asn Gln Trp Lys Asn Asp Thr Ile Ser Val Ser Cys Lys Asn Gly
145          150          155          160
Gln Trp Ser Ile Ser Lys Gln Lys
          165

```

<210> 5833

<211> 314

<212> PRT

<213> B.fragilis

<400> 5833

```

Pro Asp Lys Arg Leu Phe Ile Glu Met Lys Ile Leu Leu Thr Gly Ala
1          5          10          15
Thr Gly Phe Leu Gly Ser His Ile Ala Glu Ala Leu Leu Ala Asn Asp
          20          25          30
Val Asn Leu Met Ile Thr Lys Arg Ser Met Ser Ser Leu Asn Asn Cys
          35          40          45
Thr Ser Phe Ile Asp His Val Gln Val Ile Asn Ser Asp Asn Pro Ile
          50          55          60
Trp Ile Ser Gln Ala Cys Ser Phe Ser Pro Asp Ile Ile Ile His Ser
65          70          75          80
Ala Trp Thr Gly Val Leu Ser Gly Asn Arg Tyr Asp Trp Pro Val Gln
          85          90          95
Leu Ser Asn Ile Asp Phe Met Asn Ser Leu Leu Tyr Ile Ala Glu Lys
          100          105          110
Ser Asn Val Ser Lys Phe Ile Ala Leu Gly Ser Gln Ala Glu Tyr Gly
          115          120          125
Asp Phe Asp Gly Ile Val Ser Glu Asn Ala Gly Leu Phe Pro Val Asn
          130          135          140
Ser Tyr Gly Tyr Val Lys Ser Met Val Ser Arg Met Val Gly Ser Phe
145          150          155          160
Cys Asp Leu Arg Gly Ile Asp Trp Tyr Trp Leu Arg Val Phe Ser Val
          165          170          175
Tyr Gly Glu Arg Glu Ser Asn Gln Trp Leu Ile Pro Gly Leu Leu Thr
          180          185          190
Asn Met Leu Asp Asn Met Ala Gly Met Asp Leu Thr Leu Gly Gln Gln
          195          200          205
Arg Tyr Ala Tyr Leu Tyr Val Lys Asp Phe Ala Asn Ala Val Met Lys

```

```

      210                      215                      220
Val Cys Ser Gly Lys Thr Pro Cys Gly Val Tyr Asn Leu Ser Ser Ser
225                      230                      235                      240
Thr Ala Ile Glu Leu Arg Val Leu Leu Glu His Leu Arg Asp Arg Leu
      245                      250                      255
Asn Pro Ala Phe Glu Leu Arg Phe Gly Ala Leu Pro Tyr Arg Ala Gly
      260                      265                      270
Gln Pro Met Leu Val Gln Gly Asp Val Ser Lys Phe Val Lys Ser Phe
      275                      280                      285
Gly His Phe Glu Asn Thr Pro Leu Asn Ala Gly Leu Glu Tyr Thr Ile
      290                      295                      300
Thr Tyr Tyr Lys Lys Gln His Glu Ser Ile
305                      310

```

<210> 5834
 <211> 86
 <212> PRT
 <213> B.fragilis

```

<400> 5834
Arg Arg Arg Arg Val Met Lys Tyr Val Tyr Lys Thr Gln Gly Thr Cys
1                      5                      10                      15
Ser Thr Asn Ile Glu Leu Glu Val Glu Asn Asn Ile Val Lys Glu Val
      20                      25                      30
Ala Phe Trp Gly Gly Cys Asn Gly Asn Leu Gln Gly Ile Ser Arg Leu
      35                      40                      45
Val Thr Gly Met Pro Val Ser Asp Val Ile Thr Lys Leu Glu Gly Ile
      50                      55                      60
Arg Cys Gly Ala Arg Ser Thr Ser Cys Pro Asp Gln Leu Cys Arg Ala
65                      70                      75                      80
Leu His Glu Met Gly Phe
      85

```

<210> 5835
 <211> 205
 <212> PRT
 <213> B.fragilis

```

<400> 5835
Pro Met Leu Ser Leu Gln Phe Ile Thr His Gln Thr Glu Asn Tyr Ser
1                      5                      10                      15
Tyr Leu Glu Ser Ala Arg Met Ala Leu Glu Gly Gly Cys Lys Trp Ile
      20                      25                      30
Gln Leu Arg Met Lys Glu Ala Ser Pro Glu Glu Val Glu Ala Val Ala
      35                      40                      45
Leu Gln Leu Lys Pro Leu Cys Lys Ala Lys Glu Ala Ile Leu Ile Leu
      50                      55                      60
Asp Asp His Val Glu Leu Ala Lys Lys Leu Glu Val Asp Gly Val His
65                      70                      75                      80
Leu Gly Lys Lys Asp Met Pro Ile Gly Glu Ala Arg Gln Met Leu Gly
      85                      90                      95
Glu Ala Phe Ile Ile Gly Gly Thr Ala Asn Thr Phe Glu Asp Val Lys
      100                      105                      110
Leu His Tyr Ala Ala Gly Ala Asp Tyr Leu Gly Ile Gly Pro Phe Arg
      115                      120                      125
Phe Thr Thr Thr Lys Lys Asn Leu Ser Pro Val Leu Gly Leu Glu Gly
      130                      135                      140
Tyr Thr Ser Ile Leu Ala Gln Met Asn Glu Ala Gly Ile Arg Ile Pro
145                      150                      155                      160

```

Val Val Ala Ile Gly Gly Ile Val Ala Glu Asp Ile Pro Ala Ile Met
 165 170 175
 Glu Thr Gly Val Asn Gly Ile Ala Leu Ser Gly Ala Ile Leu Gln Ala
 180 185 190
 Pro Asp Pro Val Glu Glu Thr Lys Arg Ile Leu Asn Ile
 195 200 205

<210> 5836

<211> 297

<212> PRT

<213> B.fragilis

<400> 5836

Tyr Trp Val Gly Tyr Cys Ile Ile Ile Glu Leu Asn Phe Lys Lys Asn
 1 5 10 15
 Thr Tyr Tyr Met Ser Asn Gln Arg Glu Ala Gly Ile Thr Ala Phe Leu
 20 25 30
 Pro Val Tyr Asn Glu Glu Lys Arg Leu Lys Asn Val Leu Glu Cys Phe
 35 40 45
 Gln Trp Cys Asp Glu Ile Leu Leu Asp Lys Gly Ser Val Asp Asp
 50 55 60
 Thr Val Lys Ile Ala Lys Gln Tyr Pro Asn Val Thr Val Leu Thr Lys
 65 70 75 80
 Glu His Thr Glu Lys Tyr Asp Ser Asn Glu Ile Glu Tyr Phe Ile Lys
 85 90 95
 Asn Cys Thr Thr Glu Trp Cys Met Ile Val Thr Ala Ser Asp Leu Ile
 100 105 110
 His Pro Lys Leu Ala Arg Asn Met Lys Glu Leu Ile Asn Asn Cys Asn
 115 120 125
 Phe Glu Tyr Asp Ile Val Ser Val Pro Tyr Lys Pro Tyr Phe Leu Gly
 130 135 140
 Cys Cys Glu Lys Tyr Ser Pro Trp Tyr Thr Glu His Met Asn Lys Ile
 145 150 155 160
 Phe Arg Val Ser Val Leu Asn Leu Asn Leu Asn Ser Val His Ala Val
 165 170 175
 Leu Thr Pro Thr Ser Ser Arg Leu Tyr Gln Ile Pro Phe Thr Asp Pro
 180 185 190
 Lys Val Ala Tyr Tyr His Leu Thr His Gln Ser Ala Glu Ser Ile Ile
 195 200 205
 Glu Arg Asn Val Arg Tyr Trp Lys Gly Glu Ala Ser Ser Ser Glu Pro
 210 215 220
 Leu Ser Leu Ile Asn Lys Ile Ile Ile Arg Thr Val Leu Arg Phe Val
 225 230 235 240
 Phe Leu Arg Gly Gly Leu Phe Lys Gly Arg Gln Ala Leu Ala Leu Phe
 245 250 255
 Tyr Ser Phe Leu Ser Tyr Tyr Met Met Thr Tyr Val Cys Lys Trp Glu
 260 265 270
 Tyr Gln Asn Gly Glu Val Glu Ser Ile Tyr Thr Ala Leu Gln Lys Glu
 275 280 285
 Ile Val Asp Leu Trp Ser Lys Pro Lys
 290 295

<210> 5837

<211> 119

<212> PRT

<213> B.fragilis

<400> 5837

Ala Asn Asn Gly His Trp Ala Leu Ser Phe Ser Ser Thr Met Lys Tyr

```

1           5           10           15
Lys Glu His Ile Ser Thr Asn Thr Phe Ala Ile Ala Pro Tyr Ala Arg
20           25           30
Phe Ser Tyr Thr Glu Asn Lys Ile Val Arg Leu Phe Val Asp Gly Gly
35           40           45
Phe Gly Phe Ala Thr Thr Lys Val Lys Asp Gly Gly Asp Ala Val Asn
50           55           60
Gly Phe Glu Ile Gly Leu Lys Pro Gly Ile Ala Ile Lys Leu Asn Gln
65           70           75           80
His Phe Ser Leu Val Ala Lys Cys Gly Phe Leu Gly Tyr Lys Asp Asp
85           90           95
Tyr Met Gly Asn Gly Phe Gly Phe Ser Ala Ser Ser Glu Asp Leu Thr
100          105          110
Phe Gly Phe His Tyr Glu Phe
115

```

<210> 5838

<211> 96

<212> PRT

<213> B.fragilis

<400> 5838

```

Val Cys Leu Gly Ile Asn Glu Ser Lys Tyr Lys Glu Gly Cys Val Arg
1           5           10           15
Glu Lys Glu Lys Thr Glu Glu Ile His Asn Pro Phe Gly Ser Thr Asn
20           25           30
Cys Ile Arg Phe Leu Gly Tyr Asn Leu Ser His Arg Val Ala Pro Leu
35           40           45
Cys Leu Tyr Gly Gly Lys Val Ser Glu Lys Glu Asn Lys Lys Lys Val
50           55           60
Asn Arg Gly Leu Phe His Arg Gly Val Met Arg Asn Leu Phe Leu Pro
65           70           75           80
Phe Leu Lys Thr His His Lys Lys His Arg Val Thr Gln Arg Arg Phe
85           90           95

```

<210> 5839

<211> 118

<212> PRT

<213> B.fragilis

<400> 5839

```

Arg Gln Arg Gly Ala Thr Arg Trp Leu Arg Leu Tyr Pro Lys Asn Leu
1           5           10           15
Met Gln Leu Val Leu Pro Lys Gly Leu Cys Ile Ser Ser Val Phe Ser
20           25           30
Phe Ser Arg Thr His Pro Ser Leu Tyr Leu Leu Ser Phe Ile Pro Lys
35           40           45
His Thr Tyr Thr Asn Met Lys Val Gln Val Asn Asn Lys Glu Val Glu
50           55           60
Thr Ala Ala Ser Thr Leu Ala Gln Leu Ala Thr Gln Leu Gln Leu Pro
65           70           75           80
Glu Asn Gly Val Ala Ile Ala Val Asn Asn Arg Met Ile Pro Arg Pro
85           90           95
Gln Trp Asp Gly Phe Gly Leu Gln Glu Asn Asp Asn Leu Ile Val Ile
100          105          110
Lys Ala Ala Cys Gly Gly
115

```

<210> 5840

Leu Pro Ala Ser Pro Gly Ala Ala Thr Gly Gln Ile Val Phe Phe Ala
 435 440 445
 Asp Asp Ala Ala Glu Trp His Ala Ala Gly Lys Arg Val Val Met Val
 450 455 460
 Arg Ile Glu Thr Ser Pro Gly Asp Leu Ala Gly Met Ala Val Ala Glu
 465 470 475 480
 Gly Ile Leu Thr Ala Arg Gly Gly Met Thr Ser His Ala Ala Val Val
 485 490 495
 Ala Arg Gly Met Gly Lys Cys Cys Val Ser Gly Ala Gly Ala Leu Asn
 500 505 510
 Ile Asp Tyr Lys Ala Arg Thr Val Glu Val Asp Gly Val Leu Leu Lys
 515 520 525
 Glu Gly Asp Phe Ile Ser Leu Asn Gly Ser Thr Gly Glu Val Tyr Gln
 530 535 540
 Gly Lys Val Glu Thr Lys Ala Ala Glu Leu Ser Gly Asp Phe Ala Asp
 545 550 555 560
 Leu Met Lys Leu Ala Asp Lys Tyr Thr Arg Leu Gln Val Arg Thr Asn
 565 570 575
 Ala Asp Thr Pro His Asp Ala Glu Val Ala Arg Asn Phe Gly Ala Val
 580 585 590
 Gly Ile Gly Leu Cys Arg Thr Glu His Met Phe Phe Glu Gly Glu Lys
 595 600 605
 Ile Lys Ala Met Arg Glu Met Ile Leu Ala Glu Asn Ala Glu Gly Arg
 610 615 620
 Arg Lys Ala Leu Ala Lys Ile Leu Pro Tyr Gln Gln Ala Asp Phe Lys
 625 630 635 640
 Gly Ile Phe Lys Ala Met Ala Gly Cys Pro Val Thr Val Arg Leu Leu
 645 650 655
 Asp Pro Pro Leu His Glu Phe Val Pro His Asp Leu Lys Gly Gln Gln
 660 665 670
 Glu Met Ala Asp Thr Met Gly Val Ser Leu Gln Tyr Ile Gln Gln Arg
 675 680 685
 Val Glu Ser Leu Cys Glu His Asn Pro Met Leu Gly His Arg Gly Cys
 690 695 700
 Arg Leu Gly Asn Thr Tyr Pro Glu Ile Thr Gln Met Gln Thr Arg Ala
 705 710 715 720
 Ile Leu Gly Ala Ala Leu Glu Leu Lys Lys Glu Gly Ile Glu Thr His
 725 730 735
 Pro Glu Ile Met Val Pro Leu Thr Gly Ile Leu Tyr Glu Phe Gln Gln
 740 745 750
 Gln Glu Ser Val Ile Arg Ala Glu Ala Asp Lys Leu Phe Glu Glu Val
 755 760 765
 Gly Asp Arg Ile Asp Phe Lys Val Gly Thr Met Ile Glu Ile Pro Arg
 770 775 780
 Ala Ala Leu Thr Ala Asp Arg Ile Ala Ser Ser Ala Glu Phe Phe Ser
 785 790 795 800
 Phe Gly Thr Asn Asp Leu Thr Gln Met Thr Phe Gly Tyr Ser Arg Asp
 805 810 815
 Asp Ile Ala Ser Phe Leu Pro Val Tyr Leu Glu Lys Lys Ile Leu Lys
 820 825 830
 Val Asp Pro Phe Gln Val Leu Asp Gln Asn Gly Val Gly Gln Leu Val
 835 840 845
 Arg Met Ala Thr Glu Lys Gly Arg Ala Ile Arg Pro Asp Leu Lys Cys
 850 855 860
 Gly Ile Cys Gly Glu His Gly Gly Glu Pro Ser Ser Val Lys Phe Cys
 865 870 875 880
 His Lys Val Gly Leu Asn Tyr Val Ser Cys Ser Pro Phe Arg Val Pro
 885 890 895
 Ile Ala Arg Leu Ala Ala Ala Gln Ala Ala Ile Glu Glu

900

905

<210> 5841

<211> 472

<212> PRT

<213> B.fragilis

<400> 5841

```

Ile Ile Ile Met Lys Gln Ser Lys Ile Ile Val Ala Gly Ile Gly Pro
1           5           10           15
Gly Ser Glu Gln Asp Ile Thr Pro Ala Val Leu Ala Ala Val Arg Glu
20           25           30
Ala Asp Val Val Val Gly Tyr Lys Tyr Tyr Phe Arg Phe Ile Arg Asp
35           40           45
Phe Val Arg Pro Asp Ala Glu Cys Ile Asp Thr Gly Met Lys Arg Glu
50           55           60
Arg Ala Arg Ala Glu Gln Ala Phe Glu Tyr Ala Glu Gln Gly Lys Thr
65           70           75           80
Val Cys Val Ile Ser Ser Gly Asp Ala Gly Ile Tyr Gly Met Thr Pro
85           90           95
Leu Ile Tyr Glu Met Lys Arg Glu Arg Gln Ser Asn Val Glu Ile Ile
100          105          110
Ala Leu Pro Gly Ile Ser Ala Phe Gln Lys Ala Ala Ser Leu Leu Gly
115          120          125
Ala Pro Ile Gly His Asp Phe Cys Val Ile Ser Leu Ser Asp Leu Met
130          135          140
Thr Pro Trp Glu Arg Ile Glu Arg Arg Ile Leu Ala Ala Ala Gln Ala
145          150          155          160
Asp Phe Val Thr Ala Val Tyr Asn Pro Lys Ser Asp Gly Arg Tyr Trp
165          170          175
Gln Ile Tyr Arg Leu Arg Glu Ile Phe Leu Arg Glu Gly Arg Ser Pro
180          185          190
Glu Thr Pro Val Gly Tyr Val Arg Gln Ala Gly Arg Glu Glu Gln Glu
195          200          205
Ile His Ile Thr Thr Leu Ala Ala Phe Asp Pro Glu Thr Val Asp Met
210          215          220
Phe Thr Val Val Leu Ile Gly Asn Ser Gln Thr Tyr Thr Phe Asn Gln
225          230          235          240
Asn Ile Ile Thr Pro Arg Gly Tyr Tyr Arg Glu Thr Arg Ser Glu Ala
245          250          255
Thr Gly Ile Gly Gln Asp Ile Met Ile Arg Ser Phe Arg Thr Ile Glu
260          265          270
Thr Glu Leu Lys Asn Arg Asp Ile Pro Leu Asp Arg Lys Trp Ala Leu
275          280          285
Leu His Ala Ile His Thr Thr Ala Asp Phe Glu Met Glu Arg Leu Leu
290          295          300
Tyr Thr Asp Pro Asn Ala Val Ala Ser Leu Tyr Asp Ala Ile Arg Thr
305          310          315          320
Gly Asn Leu Arg Thr Ile Val Thr Asp Val Thr Met Ala Ala Ser Gly
325          330          335
Ile Arg Lys Gly Ala Leu Gln Arg Leu Gly Val Glu Val Lys Cys Tyr
340          345          350
Leu Asn Asp Glu Arg Val Ala Glu Met Ala Thr Ser Lys Gly Ile Thr
355          360          365
Arg Thr Gln Ala Gly Ile Arg Leu Ala Val Glu Glu His Pro Asp Ala
370          375          380
Leu Phe Val Phe Gly Asn Ala Pro Thr Ala Leu Met Glu Leu Cys Asp
385          390          395          400
Leu Ile Arg Lys Glu Lys Ala Gln Pro Ala Gly Ile Val Ala Ala Pro

```

2560

405 410 415
 Val Gly Phe Val His Val Glu Glu Ser Lys His Met Thr Lys Pro Phe
 420 425 430
 Thr Arg Ile Pro Lys Leu Ile Val Glu Gly Arg Lys Gly Gly Ser Asn
 435 440 445
 Leu Ala Ala Thr Leu Val Asn Ala Ile Leu Cys Tyr Pro Asp Ala Glu
 450 455 460
 Gln Leu Arg Pro Gly Arg Asp Val
 465 470

<210> 5842
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 5842
 Ser Arg Ile Phe Ile Pro Met Asn Ile Ile Lys Thr Ser Ile Glu Gly
 1 5 10 15
 Leu Val Ile Leu Glu Pro Arg Leu Phe Gln Asp Asp Arg Gly Tyr Phe
 20 25 30
 Phe Glu Ser Phe Asn Gln Gly Glu Phe Glu Ser Asn Val Cys Gln Thr
 35 40 45
 Thr Phe Val Gln Asp Asn Glu Ser Lys Ser Ser Tyr Gly Val Ile Arg
 50 55 60
 Gly Leu His Phe Gln Lys Pro Pro Phe Ala Gln Ser Lys Leu Val Arg
 65 70 75 80
 Val Ile Lys Gly Ala Val Leu Asp Val Ala Val Asp Ile Arg Lys Gly
 85 90 95
 Ser Pro Thr Phe Gly Lys His Val Ser Val Glu Leu Thr Glu Asp Asn
 100 105 110
 His Arg Gln Phe Phe Ile Pro Arg Gly Phe Ala His Gly Phe Ser Val
 115 120 125
 Leu Ser Glu Glu Val Ile Phe Gln Tyr Lys Cys Asp Asn Phe Tyr His
 130 135 140
 Pro Glu Ala Glu Gly Ala Ile Ala Trp Asn Asp Pro Asp Leu Asn Ile
 145 150 155 160
 Asp Trp Lys Ile Pro Gln Asp Arg Val Ile Leu Ser Gly Lys Asp Tyr
 165 170 175
 Thr His Pro Leu Leu His Asn Ile Glu Leu Gln Phe Asp Ile Asn Asn
 180 185 190
 Thr Leu Tyr Glu
 195

<210> 5843
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 5843
 Ser Met Ile Phe Met Ala Thr Thr Phe Asp Ile Gln Leu Pro His Tyr
 1 5 10 15
 Pro Arg Gly Phe His Leu Ile Thr Arg Asp Ile Leu Ser Leu Leu Pro
 20 25 30
 Asp Leu Pro Glu Asn Gly Leu Leu Val Val Phe Ile Lys His Thr Ser
 35 40 45
 Ala Gly Ile Thr Ile Asn Glu Asn Ala Asp Pro Asp Val Arg His Asp
 50 55 60
 Phe Asn Thr Phe Phe Asn Lys Leu Val Pro Asp Gly Ala Pro Tyr Phe
 65 70 75 80

Val His Thr Leu Glu Gly Pro Asp Asp Met Ser Ala His Ile Lys Ala
 85 90 95
 Ser Leu Ile Gly Thr Ser Val Ser Ile Pro Ile Arg Asn His Arg Leu
 100 105 110
 Asn Leu Gly Thr Trp Gln Gly Ile Tyr Leu Cys Glu Phe Arg Asp Gly
 115 120 125
 Gly Asp Lys Arg Lys Leu Ser Ile Thr Ile Leu Glu
 130 135 140

<210> 5844

<211> 156

<212> PRT

<213> B.fragilis

<400> 5844

Pro Gly Gly Met Leu Arg Tyr Ser Gly Val Pro Lys Glu His Pro Asp
 1 5 10 15
 Val Asn Asp Met Thr Thr Ser Ala Ser Ile Glu Ser Ser Met Glu Arg
 20 25 30
 Ser Gln Ser Ile Leu Ser Ser Ser Ala Leu Asn Trp Tyr Ala Leu Arg
 35 40 45
 Ile Thr Tyr Gly Arg Glu Leu Ala Leu Gln Glu Tyr Leu Asn Ser Glu
 50 55 60
 Gly Ile Glu Asn Phe Ile Pro Met His Tyr Glu Tyr Thr Ile Lys Asn
 65 70 75 80
 Glu Arg Arg Val Arg Lys Leu Val Pro Ala Val His Asn Leu Val Phe
 85 90 95
 Val Arg Ser Ser Arg Ser Cys Ile Asp Ala Ile Lys Glu Ser Arg Ser
 100 105 110
 Ala Thr Leu Pro Ile Arg Tyr Ile Met Asp Arg Glu Tyr His Arg Pro
 115 120 125
 Ile Ile Val Pro Asp Ser Gln Met Arg Asn Phe Met Ala Val Ser Ala
 130 135 140
 Asn Tyr Asp Glu Ser Leu Leu Tyr Phe Glu Pro Phe
 145 150 155

<210> 5845

<211> 436

<212> PRT

<213> B.fragilis

<400> 5845

Ser Leu Ile Ile Asn His Met Ser Val Lys Gly Phe Phe Phe Ile Leu
 1 5 10 15
 Val Phe Phe Leu Val Ala Ile Met Gly Phe Leu Ile Tyr Ile Ser Glu
 20 25 30
 Thr Val Val Val Lys Tyr Leu Tyr Ile Ala Glu Ala Leu Met Leu Leu
 35 40 45
 Leu Met Leu Tyr Leu Ile Leu Phe Tyr Arg Lys Ile Val Lys Pro Met
 50 55 60
 Asn Thr Ile Gly Ser Gly Met Glu Leu Leu Arg Glu Gln Asp Phe Ser
 65 70 75 80
 Ser Arg Leu Ser His Val Gly Gln Gln Glu Ala Asp Arg Val Val Asn
 85 90 95
 Val Phe Asn Arg Met Met Glu Gln Leu Lys Asn Glu Arg Leu Arg Leu
 100 105 110
 Arg Glu Gln Asn His Phe Leu Asp Leu Met Ile Asn Ala Ser Pro Met
 115 120 125
 Gly Val Ile Ile Met Thr Leu Asp Glu Glu Val Ser Gln Leu Asn Pro

```

      130                      135                      140
Met Ala Met Lys Met Met Gly Val Arg Pro Glu Glu Ala Glu Gly Arg
145                      150                      155                      160
Lys Leu Ser Glu Ile Asp Ser Pro Leu Ala Leu Glu Leu Ala Ala Ile
      165                      170                      175
Pro Asn Gly Ala Thr Ser Thr Val Arg Leu Asn Asp Ser Ser Ile Tyr
      180                      185                      190
Lys Cys Thr His Ser Ser Phe Val Asp Arg Gly Phe Gln His Pro Phe
      195                      200                      205
Tyr Leu Met Glu Gly Leu Thr Asp Glu Val Met Lys Ala Glu Lys Lys
      210                      215                      220
Ala Tyr Glu Lys Val Ile Arg Met Ile Ala His Glu Val Asn Asn Thr
225                      230                      235                      240
Thr Ala Gly Ile Thr Ser Thr Leu Asp Thr Val Glu Gln Ala Leu Tyr
      245                      250                      255
Glu Ser Glu Gly Met Glu Asp Ile Cys Asp Val Met Arg Val Cys Thr
      260                      265                      270
Glu Arg Cys Phe Ser Met Ser His Phe Ile Thr Arg Phe Ala Asp Val
      275                      280                      285
Val Lys Ile Pro Glu Pro Arg Phe Thr Pro Thr Asn Leu Asn Asp Leu
      290                      295                      300
Ala Phe Thr Cys Lys Arg Phe Met Glu Gly Met Cys Asn Asp Arg Asn
305                      310                      315                      320
Ile Arg Leu Gln Leu Ile Cys Asp Glu Ser Leu Asp Asp Val Lys Leu
      325                      330                      335
Asp Ala Ser Leu Phe Glu Gln Val Leu Val Asn Ile Ile Lys Asn Ala
      340                      345                      350
Ala Glu Ser Ile Gly Gln Asp Gly Gln Ile Ile Ile Arg Thr Ser Leu
      355                      360                      365
Pro Thr Ala Ile Glu Val Val Asp Asn Gly Pro Gly Ile Ser Lys Glu
      370                      375                      380
Thr Glu Ala Lys Leu Phe Ser Pro Phe Phe Ser Thr Lys Pro Asn Gly
385                      390                      395                      400
Gln Gly Ile Gly Leu Ile Phe Ile Arg Glu Val Leu Ser Arg His Gly
      405                      410                      415
Cys Thr Phe Ser Leu Arg Thr Tyr Ala Asp Gly Leu Thr Arg Phe Arg
      420                      425                      430
Ile Leu Phe Pro
      435

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<210> 5846

<211> 96

<212> PRT

<213> B.fragilis

<400> 5846

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Val Tyr Leu Ile Lys Thr Thr Lys Lys Met Lys Lys Ile Val Leu Phe
1                      5                      10                      15
Leu Phe Val Ala Ile Ala Thr Leu Ser Val Lys Ala Gln Asp Leu Tyr
      20                      25                      30
Met Gly Gly Thr Val Gly Leu Trp Arg Asn Asp Asp Ala Asn Thr Thr
      35                      40                      45
Ser Phe Lys Leu Ala Pro Glu Ile Gly Tyr Asn Leu Ser Glu Gln Trp
      50                      55                      60
Ala Leu Gly Val Glu Leu Gln Phe Asn His Glu Ile Gln Gly Ala Tyr
      65                      70                      75                      80
Leu Asp Lys His Ile Cys His Cys Ser Leu Arg Thr Phe Phe Leu Leu
      85                      90                      95

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<210> 5847
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 5847

Asn	Ile	Lys	Met	Met	Glu	Asn	Tyr	Lys	Gln	Asn	Tyr	Ile	His	Lys	Pro
1			5					10					15		
Tyr	Leu	Phe	Leu	Ala	Ile	Leu	Phe	Ser	Leu	Leu	Ser	Cys	Gln	Lys	Glu
		20					25					30			
Val	Val	Ser	Lys	Val	Thr	Phe	Glu	Arg	Lys	Leu	Ser	Gly	Ile	Lys	Pro
	35					40					45				
Glu	Thr	Glu	Phe	Arg	Leu	Asp	Ser	Leu	Arg	Asn	Asp	Lys	Trp	Gln	Lys
	50				55					60					
Cys	Tyr	Ile	Ile	Pro	Pro	Tyr	Gln	Gln	Tyr	Asn	Ser	Ala	Leu	Asn	Arg
65				70					75					80	
Ile	Lys	Leu	Arg	Lys	His	Asp	Leu	Asn	Lys	Ile	Lys	Glu	Asn	Ala	Ile
			85					90					95		
Ser	Asp	Gly	Ile	Asn	Thr	Phe	Val	Phe	Ile	Asn	Asn	Asp	Gly	Ser	Ile
	100					105						110			
Ser	Ile	Glu	Thr	Val	Ser	Arg	Ser	Ile	Ile	Asp	Ile	Gln	Asp	Thr	Leu
	115					120						125			
Ser	Asp	Ser	Ile	Phe	Leu	Phe	Tyr	Pro	Thr	Thr	Ile	Met	Lys	Met	Asp
	130				135						140				
Ser	Lys	Arg	Lys	Ile	Ile	Asp	Ile	Lys							
145					150										

<210> 5848
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 5848

Thr	Ile	Lys	Met	Arg	Lys	Val	Leu	Ser	Phe	Ser	Ala	Phe	Leu	Ile	Ile
1			5					10					15		
Gly	Leu	Leu	Leu	Ser	Gln	Tyr	Leu	Pro	Leu	Leu	Ala	Gly	Glu	Gly	Tyr
	20					25						30			
Ala	Thr	Val	Lys	Ile	Val	Ser	Asn	Ile	Leu	Leu	Tyr	Ile	Cys	Leu	Ser
	35				40						45				
Phe	Ile	Met	Ile	Asn	Val	Gly	Arg	Glu	Phe	Glu	Val	Asp	Lys	Thr	Arg
	50			55						60					
Trp	Arg	Ser	Tyr	Ala	Gly	Asp	Tyr	Phe	Ile	Ala	Met	Ala	Thr	Ala	Ala
65				70					75					80	
Met	Pro	Trp	Phe	Leu	Ile	Ala	Ile	Tyr	Tyr	Val	Phe	Val	Leu	Leu	Pro
		85				90						95			
Pro	Glu	Phe	Trp	Asn	Ser	Trp	Glu	Ala	Trp	Lys	Glu	Asn	Leu	Leu	Leu
	100					105						110			
Ser	Arg	Phe	Ala	Ala	Pro	Thr	Ser	Ala	Gly	Ile	Leu	Phe	Thr	Met	Leu
	115				120						125				
Ala	Ala	Ile	Gly	Leu	Lys	Ser	Ser	Trp	Ile	Tyr	Lys	Lys	Ile	Gln	Val
	130				135					140					
Leu	Ala	Ile	Phe	Asp	Asp	Leu	Asp	Thr	Ile	Leu	Leu	Met	Ile	Pro	Leu
145				150					155					160	
Gln	Ile	Met	Met	Ile	Gly	Leu	Arg	Trp	Gln	Leu	Ile	Val	Val	Val	Phe
		165					170						175		
Ile	Val	Phe	Leu	Leu	Leu	Ser	Leu	Gly	Trp	Lys	Gln	Leu	Gly	Arg	Tyr
	180					185						190			
Asn	Trp	Arg	Gln	Asp	Trp	Lys	Ala	Ile	Met	Gly	Tyr	Ser	Val	Leu	Val
	195					200						205			

Phe Val Ala Thr Gln Ala Val Tyr Tyr Phe Ser Lys Gln Leu Tyr Gly
 210 215 220
 Glu Glu Gly Ser Ile His Ile Glu Val Leu Leu Pro Ala Phe Val Leu
 225 230 235 240
 Gly Met Ile Met Lys His Lys Glu Ile Asp Thr Pro Val Glu His Lys
 245 250 255
 Val Ser Thr Gly Val Ser Phe Leu Phe Met Phe Leu Val Gly Met Ser
 260 265 270
 Met Pro His Phe Ile Gly Val Asn Phe Ala Glu Thr His Ala Gly Thr
 275 280 285
 His Ser Val Thr Gly Ser Gln Glu Met Met Ser Trp Gly Met Ile Ala
 290 295 300
 Leu His Val Leu Ile Val Ser Leu Leu Ser Asn Ile Gly Lys Leu Phe
 305 310 315 320
 Pro Val Phe Phe Tyr Arg Asp Arg Lys Phe Ser Glu Arg Leu Ala Leu
 325 330 335
 Ser Ile Gly Met Phe Thr Arg Gly Glu Val Gly Ala Gly Val Ile Phe
 340 345 350
 Ile Ala Leu Gly Tyr Asn Leu Gly Gly Pro Ala Leu Val Ile Ser Val
 355 360 365
 Leu Thr Ile Val Leu Asn Leu Ile Leu Thr Gly Ile Phe Val Leu Trp
 370 375 380
 Val Lys Lys Leu Ala Leu Arg Ser Tyr Thr Thr
 385 390 395

<210> 5849

<211> 311

<212> PRT

<213> B.fragilis

<400> 5849

Ser Lys Lys Ile Asn Met Ala Thr Ile Tyr Asp Gly Ile Asn Tyr Phe
 1 5 10 15
 Pro Val Gly Val Asn Phe Met Glu Glu Asn Ala Met Glu Val Ile Glu
 20 25 30
 Ala Lys Tyr Gly Ile Lys Gly Ser Ala Ile Val Leu Lys Leu Leu Cys
 35 40 45
 Lys Ile Tyr Lys Glu Gly Tyr Phe Ile Arg Trp Asp Glu Glu Gln Cys
 50 55 60
 Leu Ile Phe Ala Asn Lys Ala Gly Arg Glu Val Gln Ala Ala Glu Val
 65 70 75 80
 Gln Gly Ile Ile Glu Ile Leu Phe Ile Lys Gly Ile Met Asp Lys Asn
 85 90 95
 Ser Tyr Leu Glu Asn Gly Ile Leu Thr Ser Glu Asn Ile Gln Lys Val
 100 105 110
 Trp Met Glu Ala Thr Lys Arg Arg Lys Arg Glu Leu Ser Glu Leu Pro
 115 120 125
 Tyr Leu Met Val Lys Thr Glu Lys Glu Lys Glu Asn Asp Lys Pro Glu
 130 135 140
 Lys Glu Ser Asp Lys Pro Asp Asn Ala Ser Thr Gln Gln Glu Ile Glu
 145 150 155 160
 Arg Pro Lys Pro Leu Lys Glu Gly Lys Val Ala Gly Ser Thr Gly Asp
 165 170 175
 Val Ala Val Ser Pro Gly Asn Val Val His Asp Val Ala Val Asn Ala
 180 185 190
 Lys Asn Ala Cys Asn Ser Gly Gln Ser Lys Val Lys Lys Ser Arg Ala
 195 200 205
 Lys Glu Asn Lys Glu Leu Pro Pro Ser Val Pro Pro Glu Gly Lys Glu
 210 215 220

Glu Glu Arg Lys Glu Asp Ser Val Ser Leu Pro Ile Pro Gly Tyr Ala
 225 230 235 240
 Phe Asn Thr Met Thr His Asn Tyr Pro Gly Leu Thr Asp Thr Leu Gln
 245 250 255
 Arg Leu Gly Ile Asn Glu Val Ser Glu Val Asn Ala Ile Leu Arg Leu
 260 265 270
 Ser Asp Tyr Gly Arg Lys Gly Thr Thr Val Trp Arg Leu Ile Ala Asn
 275 280 285
 Thr Cys Trp Ser Asp Ile Gly Ala Lys Gly Arg Tyr Leu Ile Ala Ala
 290 295 300
 Leu Asn Arg Ala Lys Arg Lys
 305 310

<210> 5850

<211> 266

<212> PRT

<213> B.fragilis

<400> 5850

Tyr Met Lys Ile Ser Val Ile Ile Pro Cys Phe Asn Gln Gly Lys Tyr
 1 5 10 15
 Leu Ala Glu Ala Leu Asp Ser Val Val Met Gln Thr Phe Ser Asp Trp
 20 25 30
 Glu Cys Ile Ile Ile Asn Asp Gly Ser Ile Asp Asn Ser Glu Asn Val
 35 40 45
 Ala Leu Ser Tyr Val Glu Lys Asp Pro Arg Phe His Tyr Ile Cys Gln
 50 55 60
 Lys Asn Gln Gly Val Cys Ile Ala Arg Asn Arg Gly Ile Ala Met Ala
 65 70 75 80
 Gln Gly Glu Tyr Ile Leu Cys Leu Asp Gly Asp Asp Lys Ile Ser Arg
 85 90 95
 Asn Phe Leu Glu Cys Met Tyr Pro Ile Leu Asp Glu Glu Gln Ser Val
 100 105 110
 Lys Val Val Thr Ser Thr Val Val Gln Phe Gly Lys Ile His Arg Val
 115 120 125
 Ile Pro Ser Thr Asp Tyr Ser Leu Glu Lys Leu Met Gly Arg Asn Leu
 130 135 140
 Phe Val Ile Thr Ser Met Phe Arg Lys Val Asp Phe Glu Lys Thr Glu
 145 150 155 160
 Gly Phe Asn Glu Asn Met Ala Lys Gly Leu Glu Asp Trp Asp Phe Trp
 165 170 175
 Leu Ser Met Leu Glu Ser Gly Gly Glu Val Val Cys Ala Lys Gln Ala
 180 185 190
 Ile Phe Tyr Tyr Arg Ile Arg Gly Tyr Ser Arg Asn Lys Ser Ile Ser
 195 200 205
 Glu Asp Tyr Tyr Ser Leu Leu Arg Lys Thr Ile Tyr Glu Asn His Lys
 210 215 220
 His Leu Phe Ser Thr Ile Phe Phe Asn Pro Lys Tyr Ser Phe Glu Tyr
 225 230 235 240
 Tyr Leu Ile Ala Lys Ser Tyr Glu Tyr Lys Leu Gly Lys Leu Leu Phe
 245 250 255
 Arg Pro Ile Arg Phe Leu Tyr Asp Leu Phe
 260 265

<210> 5851

<211> 254

<212> PRT

<213> B.fragilis

<400> 5851

Lys Met Lys Ile Ile Thr Tyr Asn Val Asn Gly Leu Arg Ala Ala Val
 1 5 10 15
 Asn Lys Gly Leu Pro Glu Trp Leu Ala Glu Glu Asn Pro Asp Val Leu
 20 25 30
 Cys Leu Gln Glu Thr Lys Leu Gln Pro Glu Gln Tyr Pro Ala Glu Ala
 35 40 45
 Phe Glu Ala Leu Gly Tyr Lys Ala Tyr Leu Tyr Ser Ala Gln Lys Lys
 50 55 60
 Gly Tyr Ser Gly Val Ala Ile Leu Thr Lys Val Glu Pro Asp His Ile
 65 70 75 80
 Glu Tyr Gly Met Gly Ile Glu Glu Tyr Asp Asn Glu Gly Arg Phe Ile
 85 90 95
 Arg Ala Asp Phe Gly Asp Leu Ser Val Val Ser Val Tyr His Pro Ser
 100 105 110
 Gly Thr Ser Gly Asp Glu Arg Gln Ala Phe Lys Met Val Trp Leu Glu
 115 120 125
 Ala Phe Gln Lys Tyr Val Thr Glu Leu Arg Lys Ser Arg Pro Asn Leu
 130 135 140
 Ile Leu Cys Gly Asp Tyr Asn Ile Cys His Glu Pro Ile Asp Ile His
 145 150 155 160
 Asp Pro Val Arg Asn Ala Thr Asn Ser Gly Phe Leu Pro Glu Glu Arg
 165 170 175
 Glu Trp Met Thr Arg Phe Leu Ser Ala Gly Phe Ile Asp Ser Phe Arg
 180 185 190
 Thr Leu Tyr Pro Gln Lys Gln Glu Tyr Thr Trp Trp Ser Tyr Arg Phe
 195 200 205
 Asn Ser Arg Ala Lys Asn Lys Gly Trp Arg Ile Asp Tyr Cys Met Val
 210 215 220
 Ser Glu Pro Val Arg Ser Leu Leu Lys Glu Ala Val Ile Leu Asn Asn
 225 230 235 240
 Ala Val His Ser Asp His Cys Pro Met Ala Leu Glu Ile Gly
 245 250

<210> 5852

<211> 193

<212> PRT

<213> B.fragilis

<400> 5852

Asn Tyr Arg Ile Met Lys Arg Asn Leu Val Phe Val Leu Phe Ala Leu
 1 5 10 15
 Val Ser Val Val Gly Phe Ser Gln Val Ser Trp Asn Ala Lys Val Gly
 20 25 30
 Met Asn Ile Ser Asn Phe Thr Gly Asp Phe Asp Met Asn Ala Lys Val
 35 40 45
 Gly Phe Lys Ile Gly Gly Gly Met Glu Tyr Gly Phe Asn Glu Ile Trp
 50 55 60
 Ser Leu Gln Pro Ser Leu Phe Val Ser Ser Lys Gly Ala Lys Lys Asp
 65 70 75 80
 Glu Leu Ser Val Asn Ala Val Tyr Leu Glu Leu Pro Val Met Ala Ala
 85 90 95
 Ala Arg Phe Lys Val Ala Asp Asn Thr Asn Ile Val Leu Ser Ala Gly
 100 105 110
 Pro Tyr Phe Ala Cys Gly Ile Ala Gly Asn Ser Lys Val Asp Leu Gly
 115 120 125
 Lys Gly Arg Leu Glu Val Asp Thr Phe Gly Asp Asp Gly Leu Leu Lys
 130 135 140
 Arg Gly Asp Val Gly Leu Gly Ile Gly Val Ala Ala Glu Phe Gly Lys

145 150 155 160
 Ile Ile Ala Gly Leu Asp Gly Gln Phe Gly Phe Val Asp Val Met Asp
 165 170 175
 Asn Val Asn Gly Lys Asn Leu Asn Leu Ser Ile Ser Val Gly Tyr Lys
 180 185 190
 Phe

<210> 5853
 <211> 956
 <212> PRT
 <213> B.fragilis

<400> 5853
 Thr Asp Thr Phe Val Val Leu Phe Tyr Phe Phe Cys Arg Ser Leu Tyr
 1 5 10 15
 Val Val Arg Arg His His Val Thr Val Asp Gly Thr Asp Asp Leu Gly
 20 25 30
 Arg Tyr Leu Val Pro Gly Pro Ser Val Tyr Glu Asn Pro Ala Gly Arg
 35 40 45
 Gly Ile Ala Arg Arg Ile Lys Ala Tyr Arg Asn Ile Leu Ser Ser Ile
 50 55 60
 Cys Val Val Phe Lys Ile Ile Thr Tyr Ile Cys Val His Asn Pro Asp
 65 70 75 80
 Thr Thr Gln Ile Phe Ala Met Asn Lys Arg Leu Tyr Thr Ile Phe Leu
 85 90 95
 Ile Ser Val Phe Leu Leu Leu Pro Gly Phe Ser Thr Ala Ala Glu Arg
 100 105 110
 Ile Tyr Asn Val Leu Phe Val Gln Ser Tyr Ala Pro Glu Thr Pro Trp
 115 120 125
 His Asn Asp Leu Val Arg Gly Leu Lys Asp Gly Phe Gly Glu Ser Gly
 130 135 140
 Leu Lys Val Asn Ile Thr Thr Glu Phe Leu Asp Ala Asn Phe Trp Thr
 145 150 155 160
 Tyr Gln Ser Glu Lys Leu Ile Met Arg Arg Phe Cys Glu Arg Ala Arg
 165 170 175
 Glu Arg Gly Thr Asp Leu Ile Val Thr Val Ser Asp Glu Ala Phe His
 180 185 190
 Thr Leu Leu Thr Cys Gly Asp Ser Leu Ala Leu Gln Leu Pro Val Val
 195 200 205
 Phe Phe Asn Ile Lys Tyr Pro Glu Gly Ser Leu Ile Asp Ser Leu Pro
 210 215 220
 Asn Val Cys Gly Tyr Thr Ala Asn Pro Asp Phe Gly Glu Leu Leu Arg
 225 230 235 240
 Gln Ala Ser Arg Leu Phe Pro Thr Arg Thr Glu Val Val Cys Ile Ser
 245 250 255
 Asp Asn Ser Leu Leu Ser Ser Lys Gly Lys Asp Asp Phe Met Asn Glu
 260 265 270
 Trp Glu Gly Phe Val Glu Glu His Pro Glu Tyr Thr Val Thr Phe Tyr
 275 280 285
 Asn Ser Gln Thr Asp Thr Thr Asn Lys Ile Ile Ala Ser Thr Cys Tyr
 290 295 300
 Pro Arg Asn Thr His Lys Thr Leu Ile Ile Ala Pro Lys Trp Ser Ser
 305 310 315 320
 Phe Met Ser Phe Ile Gly Arg Asn Ser Lys Ala Pro Phe Phe Ser Cys
 325 330 335
 Glu Asn Leu Ala Leu Thr Asn Gly Ala Phe Gly Ala Tyr Asp Ala Asp
 340 345 350
 Ser Tyr Ala Ser Ala His Glu Val Gly Arg Thr Ala Ala Asp Val Leu

355	360	365
Arg Gly Lys Ser Pro Ser Glu Val Gly Ile Ile Glu Ser Pro Leu Lys		
370	375	380
Phe Met Tyr Asp Phe Lys Gln Leu Val Phe Phe Lys Val Asp Pro Lys		
385	390	395
Gln Ala Ser Ala Ile Gly Gly Thr Ile Ile Asn Glu Pro Tyr Met Glu		
405	410	415
Lys Tyr Arg Met Leu Tyr Ile Leu Leu Tyr Ser Ser Ile Leu Ala Leu		
420	425	430
Leu Val Phe Leu Ile Val Trp Leu Tyr Arg Ile Asn Arg Arg Glu Ser		
435	440	445
Arg Arg Arg Ile His Ala Gln Thr Arg Leu Leu Ile Gln Asn Arg Leu		
450	455	460
Val Ala Gln Cys Asp Glu Phe Asp Asn Val Phe His Ser Ile Arg Asp		
465	470	475
Gly Val Ile Thr Tyr Asp Thr Asp Phe Arg Ile His Phe Thr Asn Arg		
485	490	495
Ser Leu Leu Lys Met Leu His Leu Pro Lys Asp Glu Ala Ala Arg Pro		
500	505	510
Tyr Glu Gly Leu Pro Ala Gly Ser Ile Phe Lys Ile Tyr Asn Asn Gly		
515	520	525
Lys Glu Ile Leu Arg Pro Met Leu Lys Gln Val Val Thr Glu Glu Ser		
530	535	540
Ser Val Val Ile Pro Glu Asn Ser Phe Met Gln Glu Val His Ser Gly		
545	550	555
Ser Tyr Phe Pro Val Ser Gly Glu Val Val Pro Ile Arg Ala His Gly		
565	570	575
Lys Ile Thr Gly Met Ala Leu Ser Ala Arg Asn Ile Ser Asp Glu Glu		
580	585	590
Met Gln Lys Arg Phe Phe Arg Met Ala Val Asp Glu Ser Ser Ile Tyr		
595	600	605
Pro Trp Gln Tyr Asn Ile Arg Thr Gly Leu Phe Thr Phe Pro Ala Gly		
610	615	620
Phe Leu Thr Arg Phe Gly Phe Ala Glu Asn Lys Thr Thr Ile Ser Arg		
625	630	635
Asp Glu Met Asp Arg Met Val His Pro Asp Asp Gln Glu Ser Ala Tyr		
645	650	655
Glu Val Phe Asn Arg Ala Leu Ala Gly Leu Ser Gln Ser Thr Arg Met		
660	665	670
Ser Phe Arg Gln Leu Ser Gly Asp Gly Asn Tyr Glu Trp Trp Glu Tyr		
675	680	685
Arg Thr Ser Val Leu Ser Gly Leu Thr Thr Asp Thr Pro Tyr Ser Ile		
690	695	700
Leu Gly Val Cys Gln Ser Ile Gln Arg Tyr Lys Thr Thr Glu Glu Glu		
705	710	715
Leu Thr Ala Ala Arg Asp Lys Ala Leu Gln Ala Asp Lys Leu Lys Ser		
725	730	735
Ala Phe Leu Ala Asn Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala		
740	745	750
Ile Val Gly Phe Ser Asp Leu Leu Ser Asp Thr Ser Gly Phe Thr Glu		
755	760	765
Glu Glu Val Lys Leu Phe Ile Glu Thr Ile Asn Lys Asn Cys Gly Leu		
770	775	780
Leu Leu Ala Leu Ile Asn Asp Ile Leu Asp Leu Ser Arg Ile Glu Ser		
785	790	795
Gly Thr Met Asp Phe Gln Phe Ala Gly His Asn Leu Pro Leu Leu Met		
805	810	815
Lys Asn Val Tyr Asp Ser Gln Arg Leu Asn Met Pro Pro Gly Val Gln		
820	825	830

Leu Val Leu Lys Leu Pro Glu Asn Ser Lys Lys Tyr Leu Val Thr Asp
 835 840 845
 Asn Val Arg Leu Gln Gln Val Val Asn Asn Leu Ile Asn Asn Ala Val
 850 855 860
 Lys Phe Thr Thr Gln Gly Ser Ile Thr Phe Gly Tyr Thr Glu Glu Glu
 865 870 875 880
 Pro Gly Tyr Thr Ser Leu Phe Val Glu Asp Thr Gly Lys Gly Ile Ser
 885 890 895
 Glu Asp Gly Leu Arg His Ile Phe Glu Arg Phe Tyr Lys Val Asp Ser
 900 905 910
 Phe Thr Gln Gly Ala Gly Leu Gly Leu Ser Ile Cys Gln Thr Ile Val
 915 920 925
 Gly Arg Leu Asn Gly Thr Ile Thr Val Ala Ser Glu Glu Gly His Gly
 930 935 940
 Thr Arg Phe Thr Val Arg Leu Pro Asp Ile Cys Glu
 945 950 955

<210> 5854

<211> 381

<212> PRT

<213> B.fragilis

<400> 5854

Leu Thr Met Ile Asp Phe Thr Gln Phe Pro Ser Pro Cys Tyr Ile Met
 1 5 10 15
 Glu Glu Glu Leu Leu Arg Lys Asn Leu Ser Leu Ile Lys Ser Val Ala
 20 25 30
 Asp Asp Ala Gly Val Glu Ile Ile Leu Ala Phe Lys Ser Phe Ala Met
 35 40 45
 Trp Arg Ser Phe Pro Ile Phe Arg Glu Tyr Ile Gly His Ser Thr Ala
 50 55 60
 Ser Ser Val Tyr Glu Ala Arg Leu Ala Leu Glu Glu Phe Gly Ser Lys
 65 70 75 80
 Ala His Thr Tyr Ser Pro Ala Tyr Thr Glu Ala Asp Phe Pro Glu Ile
 85 90 95
 Met Arg Cys Ser Ser His Ile Thr Phe Asn Ser Leu Ser Gln Phe Ser
 100 105 110
 Arg Phe Tyr Pro Leu Thr Val Ala Glu Gly Ser Gly Ile Ser Cys Gly
 115 120 125
 Ile Arg Val Asn Pro Glu Tyr Ser Glu Val Glu Thr Glu Leu Tyr Asn
 130 135 140
 Pro Cys Ala Pro Gly Thr Arg Phe Gly Ile Thr Ala Asp Leu Leu Pro
 145 150 155 160
 Ala Arg Leu Pro Gln Gly Ile Glu Gly Phe His Cys His Cys His Cys
 165 170 175
 Glu Ser Ser Ser Phe Glu Leu Glu Arg Thr Leu Gln His Leu Glu Glu
 180 185 190
 Lys Phe Ser Pro Trp Phe Ser Gln Ile Lys Trp Leu Asn Leu Gly Gly
 195 200 205
 Gly His Leu Met Thr Arg Lys Asp Tyr Asp Thr Arg His Leu Thr Gly
 210 215 220
 Leu Leu Gln Gly Leu Lys Lys Arg Tyr Pro His Leu Arg Ile Ile Leu
 225 230 235 240
 Glu Pro Gly Ser Ala Phe Thr Trp Gln Thr Gly Val Leu Thr Ser Glu
 245 250 255
 Val Val Asp Ile Val Glu Ser Arg Gly Ile Arg Thr Ala Ile Leu Asn
 260 265 270
 Val Ser Phe Thr Cys His Met Pro Asp Cys Leu Glu Met Pro Tyr Gln
 275 280 285

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Pro Ser Val Arg Gly Ala Val Met Gly Glu Glu Gly Pro Phe Val Tyr
 290                295                300
Arg Leu Gly Gly Asn Ser Cys Leu Ser Gly Asp Tyr Met Gly Ser Trp
305                310                315                320
Ser Phe Asp His Glu Leu Gln Ala Gly Glu Arg Ile Val Phe Glu Asp
                325                330                335
Met Ile His Tyr Thr Met Val Lys Thr Asn Met Phe Asn Gly Ile His
                340                345                350
His Pro Ala Ile Ala Leu Trp Thr Ala Asp Gly Lys Ala Glu Ile Phe
                355                360                365
Arg Gln Phe Ser Tyr Glu Asp Tyr Arg Asp Arg Met Ser
 370                375                380

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<210> 5855

<211> 644

<212> PRT

<213> B.fragilis

<400> 5855

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Ile Ile Met Ile Leu Ile Phe Gly Gly Thr Thr Glu Gly Arg Ala Ala
 1                5                10                15
Val Asn Val Ile Glu Glu Ala Gly Lys Pro Tyr Tyr Tyr Ser Thr Lys
                20                25                30
Gly Asp Glu Gln Asp Ile Tyr Leu His His Gly Ile Arg Leu Ser Gly
                35                40                45
Ala Met Thr Arg Arg Thr Leu Lys Ala Phe Cys Arg Gln Asn Asp Ile
                50                55                60
Arg Leu Leu Ile Asp Ala Ala His Pro Phe Ala Glu Lys Leu His Asp
65                70                75                80
Thr Val Thr Asp Val Ala His Asp Leu Gly Ile Pro Cys Ile Arg Tyr
                85                90                95
Glu Arg Ile Tyr Asp Arg Ser Tyr Leu Asn Pro Ile Phe Glu Asp Asn
                100                105                110
Cys Asp Pro Asp Asp Leu Pro Phe Lys Phe Glu Tyr Asp Asn Arg Asp
                115                120                125
Leu Leu Arg Glu Leu Lys Lys Glu Lys Glu Gly His Arg Phe Leu Phe
                130                135                140
Leu Thr Gly Val Gln Ser Ile Ala Arg Phe Lys Ser Leu Trp Thr Lys
145                150                155                160
Lys Lys Tyr Glu Cys Tyr Phe Arg Ile Leu Asp Arg Asp Ser Ser Arg
                165                170                175
Glu Ile Ala Arg Gln Ala Gly Phe Pro Glu Asp His Leu Val Tyr Tyr
                180                185                190
His Pro Glu Thr Glu Asn Leu Pro Gln Leu Leu Gln Glu Leu Ser Pro
                195                200                205
Gln Ala Val Val Leu Lys Glu Ser Gly Lys Ser Gly Gly Phe Thr Glu
                210                215                220
Lys Lys Asp Met Ile Leu Glu Tyr Gly Ala Thr Pro Tyr Ile Leu Leu
225                230                235                240
His Pro Glu Leu Glu Tyr Tyr Asp Ile Thr Val Asp Gly Val Asn Ser
                245                250                255
Leu Arg Arg Thr Leu Glu Lys Met Leu Pro Asp Tyr Phe Pro Leu Arg
                260                265                270
Ser Gly Leu Thr Thr Gly Ser Cys Ala Ala Ala Ala Ile Ala Ala
                275                280                285
Phe Arg Lys Leu Lys Asn Pro Ile Leu Glu Asp Phe Asn Arg Asn Ile
                290                295                300
His Thr Val Leu Pro Ser Gly Glu Thr Ile Glu Ile Pro Cys Gln Ser
305                310                315                320

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Val Ser Gly Thr Phe Ser Asp Glu Lys Ile Glu Val Ser Ala Thr Val
      325      330      335
Ile Lys Asp Gly Gly Asp Asp Pro Asp Val Thr Ser Gly Leu Pro Ile
      340      345      350
Val Thr Thr Leu Thr Leu Asn Leu Ala Glu Ala Lys Gln Ala Asn Asn
      355      360      365
Ala Pro Val Gln Thr Pro Glu Thr Trp Glu Phe Val Phe His Gly Gly
      370      375      380
Pro Gly Val Gly Thr Val Thr Leu Pro Gly Leu Gly Leu Glu Val Gly
385      390      395      400
Gly Pro Ala Ile Asn Ala Thr Pro Arg Gln Met Ile Ile Asp Asn Leu
      405      410      415
Arg Asn Cys Ile Arg Tyr Tyr Tyr Arg Tyr Leu Pro Asn Val Pro Ile
      420      425      430
His Val Thr Ile Ser Val Pro Gly Gly Glu Glu Val Ala Ala Arg Thr
      435      440      445
Phe Asn Pro Arg Leu Gly Val Val Gly Gly Ile Ser Ile Ile Gly Thr
      450      455      460
Ser Gly Ile Val Lys Pro Phe Ser Ser Glu Ala Phe Val Arg Ser Ile
465      470      475      480
Arg Lys Glu Met Glu Val Ala Arg Ala Thr Gly Ala Cys Arg Ile Val
      485      490      495
Ile Asn Ser Gly Ala Lys Ser Glu Lys Tyr Ile Arg Asn Leu Tyr Pro
      500      505      510
Glu Leu Pro Pro Gln Ala Phe Val His Tyr Gly Asn Phe Ile Gly Glu
      515      520      525
Thr Ile Gly Ile Ala Ala Glu Leu Gly Ile Ser Arg Leu Thr Leu Gly
      530      535      540
Val Met Met Gly Lys Ala Val Lys Leu Ala Glu Gly His Leu Asp Thr
545      550      555      560
His Ser Lys Lys Val Thr Met Asn Lys Glu Phe Leu Lys Glu Ile Ala
      565      570      575
Arg Arg Cys Gly Cys Thr Pro Ser Ser Ile Glu Ala Ile Asp His Ile
      580      585      590
Ile Leu Ala Arg Glu Leu Trp Asn Ile Leu Pro Glu Thr Glu Leu Gln
      595      600      605
Ala Phe Cys Ser Leu Leu Ile Glu Gln Cys His Arg His Cys Asp Val
610      615      620
Leu Leu Pro Asn Gly Glu Leu Thr Ile Leu Leu Ile Thr Glu Glu Gly
625      630      635      640
Lys Ile Ile Gln

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<210> 5856

<211> 75

<212> PRT

<213> B.fragilis

<400> 5856

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Leu Ser Tyr Val Ser Ser Ile Ala Pro Leu Pro Ile Lys Glu Val Ile
1      5      10      15
Thr Gly Lys Trp Cys Arg Leu Met Lys Ser Phe Ser Lys Thr Ile Ser
      20      25      30
Glu Leu Gln His Pro Ala Pro Lys Ser Asn Met Gly Arg Trp Asp Asp
      35      40      45
Ser Ile Asn Asn Leu Ile Ser Ser Gln Ala Ile Lys Gly Leu Phe Lys
      50      55      60
Ile Leu Ser Pro Glu Tyr Pro Ile Asn Val Ser
65      70      75

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<210> 5857
 <211> 450
 <212> PRT
 <213> B.fragilis

<400> 5857

Phe	Gln	Arg	Val	Phe	Phe	Lys	Asn	Ile	Tyr	Asn	Phe	Leu	Gln	Leu	Asp
1				5					10					15	
Ala	Ala	Val	Ile	Tyr	Ser	Ser	Leu	Ser	Lys	Ile	Leu	Ser	Gly	Phe	Gly
			20					25					30		
Gly	Phe	Leu	Thr	Val	Tyr	Leu	Ile	Ala	Lys	Lys	Leu	Thr	Leu	Val	Glu
			35				40					45			
Gln	Gly	Tyr	Tyr	Tyr	Thr	Phe	Ile	Ser	Val	Leu	Tyr	Ile	Gln	Val	Phe
			50				55				60				
Phe	Glu	Leu	Gly	Leu	Asn	Ser	Ile	Ile	Thr	Gln	Phe	Val	Ala	His	Glu
65					70					75				80	
Lys	Ala	His	Leu	Asp	Trp	Lys	Gly	Lys	Asp	Asp	Leu	Val	Gly	Lys	Glu
				85					90					95	
Phe	His	Leu	Ser	Arg	Leu	Ala	Ser	Val	Leu	Arg	Leu	Cys	Val	Lys	Tyr
			100					105					110		
Tyr	Ser	Tyr	Leu	Ala	Ile	Gly	Leu	Leu	Ile	Val	Leu	Phe	Ile	Gly	Gly
			115				120						125		
Tyr	Val	Phe	Phe	Ser	Ile	Asn	Ser	Asn	Ile	Gly	Val	Ser	Trp	Lys	Ile
						135					140				
Pro	Trp	Leu	Leu	Leu	Cys	Val	Ser	Thr	Ser	Leu	Ser	Phe	Phe	Leu	Asn
145					150					155					160
Pro	Phe	Leu	Ser	Phe	Leu	Glu	Gly	Leu	Asn	Leu	Met	Lys	Glu	Val	Cys
				165					170					175	
Phe	Ile	Arg	Phe	Ile	Gln	Gln	Thr	Val	Ser	Leu	Leu	Ile	Leu	Trp	Val
			180					185						190	
Gly	Leu	Ile	Gly	Gly	Met	Lys	Leu	Tyr	Val	Gly	Gly	Cys	Ser	Ser	Leu
			195				200					205			
Ala	Gly	Gly	Val	Ala	Ile	Leu	Ile	Phe	Val	Ser	Tyr	Arg	Tyr	Arg	Ile
			210				215				220				
Leu	Phe	Leu	Asn	Ile	Tyr	Gly	Lys	Val	Thr	Ile	His	Phe	Ile	Asn	Tyr
225					230					235					240
Lys	Lys	Glu	Ile	Phe	Pro	Phe	Gln	Trp	Lys	Val	Ala	Val	Gly	Trp	Leu
				245					250					255	
Ser	Ser	Ser	Leu	Val	Phe	Gln	Phe	Phe	Asn	Pro	Ile	Leu	Phe	Ala	Thr
			260					265					270		
Ile	Gly	Ser	Ala	Ala	Ala	Gly	Gln	Leu	Gly	Met	Thr	Leu	Ser	Val	Ile
			275				280					285			
Asn	Gly	Val	Ser	Ser	Val	Ser	Met	Asn	Trp	Ile	Tyr	Thr	Lys	Val	Pro
			290			295					300				
Asn	Leu	Ser	Lys	Leu	Val	Ser	Leu	Arg	Asp	Phe	Lys	Glu	Leu	Asp	Lys
305					310					315					320
Ser	Phe	Ser	Lys	Ile	Leu	Ala	Val	Leu	Val	Leu	Leu	Ser	Cys	Met	Gly
			325					330						335	
Phe	Ile	Ile	Val	Ala	Leu	Cys	Leu	Ile	Gln	Phe	Asn	Ile	Leu	His	Ile
			340					345					350		
Ala	Ser	Lys	Leu	Leu	Pro	Met	Ser	Leu	Phe	Leu	Ile	Met	Ser	Leu	Ser
			355				360					365			
Ser	Val	Phe	Thr	Gln	Ile	Thr	Ser	Cys	Trp	Ala	Ile	Tyr	Phe	Arg	Cys
			370			375					380				
Phe	Lys	Lys	Glu	Pro	Phe	Leu	Arg	Val	Ser	Leu	Ile	Asn	Leu	Ala	Val
385					390					395					400
Val	Phe	Leu	Ile	Val	Phe	Pro	Cys	Thr	Leu	Tyr	Tyr	Arg	Leu	Ser	Gly
				405					410					415	

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Leu Val Leu Ser Tyr Ser Leu Ala Ala Leu Val Gly Leu Ile Leu Gly
 420 425 430
 Trp Leu Leu Tyr Asn Asn Arg Ala Glu Phe Gln Lys Lys Tyr Val Leu
 435 440 445
 Tyr Glu
 450

<210> 5858

<211> 61

<212> PRT

<213> B.fragilis

<400> 5858

Ser Leu Val Val Lys Leu Phe Val Gln Ser Arg Leu Phe Phe Thr Ile
 1 5 10 15
 Glu Ser Glu Ala Ile Leu Glu Ile Lys Val Phe Leu Lys Ile Ile Ile
 20 25 30
 His Tyr Tyr Val Lys Leu Tyr Thr Lys Ile Ile Asn Thr Tyr Phe Leu
 35 40 45
 Pro Phe Ser Leu Ile Arg Ser Ile His Leu Ser Ile Ile
 50 55 60

<210> 5859

<211> 305

<212> PRT

<213> B.fragilis

<400> 5859

Asn Thr Ala Phe Pro Phe Leu Phe Pro Thr Phe Val Leu Arg Ile Lys
 1 5 10 15
 Asn Gln Asp Ser Lys Met Lys Lys Phe Ile Lys Gly Val Arg Phe Thr
 20 25 30
 Pro Ser Asn Tyr Pro Asp Glu Ile Glu Asp Lys Ile Gln Lys Tyr Arg
 35 40 45
 Lys Gln Gly Tyr Lys Leu Pro Arg Lys Val Leu Arg Thr Pro Glu
 50 55 60
 Gln Ile Glu Gly Ile Arg Glu Ser Ala Lys Ile Asn Thr Ala Leu Leu
 65 70 75 80
 Asn His Ile Ala Glu Asn Ile Arg Glu Gly Met Ser Thr Glu Glu Ile
 85 90 95
 Asp Arg Leu Val Tyr Asp Phe Thr Thr Ser His Gly Ala Ile Pro Ala
 100 105 110
 Pro Leu Asn Tyr Glu Gly Phe Pro Lys Ser Val Cys Thr Ser Ile Asn
 115 120 125
 Asp Val Val Cys His Gly Ile Pro Ser Ser Thr Glu Ile Leu Lys Ser
 130 135 140
 Gly Asp Ile Ile Asn Val Asp Val Ser Thr Ile Tyr Asn Gly Tyr Phe
 145 150 155 160
 Ser Asp Ala Ser Arg Met Phe Met Ile Gly Glu Val Ser Pro Glu Lys
 165 170 175
 Gln Arg Leu Val Gln Val Thr Lys Glu Cys Met Glu Ile Gly Ile Ala
 180 185 190
 Ala Ala Gln Pro Trp Ala Arg Leu Gly Asp Val Gly Ala Ala Ile Gln
 195 200 205
 Glu His Ala Glu Lys Asn Gly Tyr Ser Val Val Arg Asp Leu Cys Gly
 210 215 220
 His Gly Val Gly Ile Lys Phe His Glu Glu Pro Asp Val Glu His Phe
 225 230 235 240
 Gly Arg Arg Gly Thr Gly Met Leu Ile Leu Pro Gly Met Thr Phe Thr

245 250 255
 Ile Glu Pro Met Ile Asn Met Gly Thr Tyr Glu Val Phe Val Asp Ser
 260 265 270
 Ala Asp Asp Trp Thr Val Cys Thr Asp Asp Gly Leu Pro Ser Ala Gln
 275 280 285
 Trp Glu Asn Met Ile Leu Ile Thr Glu Thr Gly Asn Glu Ile Leu Thr
 290 295 300
 Tyr
 305

<210> 5860
 <211> 336
 <212> PRT
 <213> B.fragilis

<400> 5860
 Cys Val Lys Leu Tyr Ile Val Leu Lys Asn Lys Phe Arg Asn Leu Phe
 1 5 10 15
 Leu Ala Phe Gly Ile Leu Ala Val Ile Ile Met Leu Phe Thr Phe Asp
 20 25 30
 Val Ser Tyr Asp Glu Leu Leu Asp Asn Leu Arg Arg Ala Gly Phe Tyr
 35 40 45
 Leu Pro Leu Val Leu Val Leu Trp Leu Phe Ile Tyr Leu Ile Asn Thr
 50 55 60
 Leu Ser Trp Tyr Ile Ile Leu Arg Ser Ser Gly Pro Val Asn Ser Leu
 65 70 75 80
 Ser Phe Ala Arg Leu Tyr Lys Phe Thr Val Ser Gly Phe Ala Leu Asn
 85 90 95
 Tyr Val Thr Pro Val Gly Leu Met Gly Gly Glu Pro Tyr Arg Ile Met
 100 105 110
 Glu Leu Thr Ser Tyr Val Gly Val Glu Arg Ala Thr Ser Ser Val Ile
 115 120 125
 Leu Tyr Val Met Met His Ile Phe Ser His Phe Cys Phe Trp Leu Ser
 130 135 140
 Ser Val Leu Ile Tyr Val Phe Phe Tyr Pro Val Gly Trp Gly Met Gly
 145 150 155 160
 Ile Val Leu Gly Leu Ile Thr Leu Phe Cys Leu Leu Val Thr Leu
 165 170 175
 Phe Ile Lys Gly Tyr Arg Asn Gly Met Ala Val Ala Cys Val Arg Leu
 180 185 190
 Gly Ser His Ile Pro Phe Leu Lys Lys Arg Ala Val Arg Phe Ala Glu
 195 200 205
 Leu His Lys Glu Lys Leu Glu Thr Ile Asp Arg Gln Ile Ala Leu Leu
 210 215 220
 His Gln Gln Arg Lys Ser Thr Phe Tyr Ser Ala Leu Gly Leu Glu Tyr
 225 230 235 240
 Thr Ala Arg Ile Val Gly Cys Leu Glu Val Trp Leu Ile Leu Asn Val
 245 250 255
 Leu Thr Thr Asp Val Ser Phe Val Gly Cys Ile Leu Ile Val Ala Phe
 260 265 270
 Ser Ser Leu Leu Ala Asn Leu Leu Phe Phe Leu Pro Met Gln Leu Gly
 275 280 285
 Gly Arg Glu Gly Gly Phe Ala Leu Ala Val Ala Gly Leu Ser Leu Ser
 290 295 300
 Gly Ala Tyr Gly Val Phe Ala Ala Leu Ile Thr Arg Val Arg Glu Met
 305 310 315 320
 Val Trp Ile Val Ile Gly Leu Val Leu Met Lys Ile Gly Asn Arg Arg
 325 330 335

<210> 5861
 <211> 282
 <212> PRT
 <213> B.fragilis

<400> 5861

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Arg Pro Thr Ser Ser Val Phe Ser Val Ile Arg Glu Pro Thr Gly Glu
1          5          10          15
Thr Pro Glu Gln Leu Ala Ala Leu Leu Lys Glu Gly Thr Phe Met Val
          20          25          30
Ser Arg Asn Val Phe Glu Ser Arg Tyr Lys Ile Asp Leu Lys Asp Tyr
          35          40          45
Val Gly Lys Glu Phe Cys Leu Asp Gln Asp Thr Ala His Leu Ser Lys
          50          55          60
Leu Val Ala Ala Leu Gln Val Val Arg Tyr Asp Asp Phe Ser Ser Gly
65          70          75          80
Ala Tyr Ser Arg Ser Ala Val Ile Leu Leu Pro Glu Asn Arg Leu Ala
          85          90          95
Ser Gly Asn Glu Ile Cys Leu Arg Thr Asn Lys Asn Glu Ser Ala Ala
          100          105          110
Phe Ala Glu Gln Leu Met Lys Asp Ala Pro Ser Gln Tyr Arg Val Gly
          115          120          125
Asn Leu Phe Leu Thr Lys Val Ser Ser Phe Arg Asp Ile Arg His Thr
          130          135          140
Phe Gln Leu Asp Asp Val Asn Thr Leu Arg Asn Tyr Leu Val Gly Met
145          150          155          160
Gly Phe Leu Leu Leu Asn Ile Phe Leu Gly Leu Leu Gly Thr Phe Trp
          165          170          175
Phe Arg Thr Gln Gln Arg Lys Gly Glu Met Ala Leu Met Met Ala Val
          180          185          190
Gly Gly Ser Lys Gln Ser Val Phe Phe Arg Leu Leu Ser Glu Gly Trp
          195          200          205
Leu Met Leu Leu Leu Val Thr Pro Leu Ala Ile Gly Val Asp Phe Tyr
          210          215          220
Ile Ala Lys Ser Glu Leu Thr Pro Ser Trp Tyr Phe Ser Thr Phe Ser
225          230          235          240
Val Gly Arg Phe Met Leu Cys Glu Gly Ile Thr Leu Leu Leu Met Ala
          245          250          255
Leu Met Ile Leu Ala Gly Ile Trp Phe Pro Ala Arg Gln Ser Met Lys
          260          265          270
Ile Gln Pro Ala Glu Ala Leu His Glu Glu
          275          280

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<210> 5862
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 5862

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Ser Glu Ile Pro Ile Thr Thr Pro Pro Phe Ala Val Pro Ser Asn Leu
1          5          10          15
Val Ile Ala Ile Ala Val Thr Ser Val Ala Ser Val Asn Cys Phe Ala
          20          25          30
Cys Ser Lys Ala Phe Cys Pro Val Glu Pro Ser Ser Thr Asn Asn Thr
          35          40          45
Ser Phe Gly Ala Ser Gly Thr Thr Phe Phe Ile Thr Phe Leu Ile Phe
          50          55          60
Val Ser Ser Phe Ile Lys Pro Thr Leu Leu Cys Lys Arg Pro Ala Val
65          70          75          80

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Ser Ile Ile Thr Thr Ser Ala Leu Leu Ala Thr Ala Glu Leu Asn Val
 85 90 95
 Ser Asn Ala Thr Glu Ala Gly Ser Ala Pro Ile Phe Cys Leu Met Thr
 100 105 110
 Gly Thr Ser Thr Leu Ser Pro His Ile Thr Asn Cys Ser Thr Ala Ala
 115 120 125
 Ala Arg Lys Val Ser Ala Ala Pro Lys Tyr Thr Asp Leu Pro Ala Phe
 130 135 140
 Leu Asn
 145

<210> 5863

<211> 363

<212> PRT

<213> B.fragilis

<400> 5863

Thr Lys Leu Thr Gly Lys Met Asn Lys Tyr Ile Leu Leu Ile Val Leu
 1 5 10 15
 Leu Phe Leu Val Ser Gly Arg Ile Ala Gln Ser Val Thr Val Asp
 20 25 30
 Ala Lys Ile Asp Ser Leu Gln Ile Leu Ile Gly Glu Gln Ala Lys Val
 35 40 45
 Gln Leu Gln Val Ala Met Asp Ala Lys Gln Arg Ala Val Phe Pro Ser
 50 55 60
 Phe Thr Asp Thr Leu Val Arg Gly Val Glu Ile Val Asp Ile Ala Lys
 65 70 75 80
 Pro Asp Thr Gln Tyr Leu Asn Asp Arg Gln Arg Met Leu Ile Thr Gln
 85 90 95
 Glu Tyr Thr Val Thr Ser Phe Asp Ser Ala Leu Tyr Tyr Ile Pro Pro
 100 105 110
 Met Gly Val Lys Ile Asp Asn Lys Glu Tyr Lys Ser Lys Ala Leu Ala
 115 120 125
 Leu Lys Val Tyr Ser Met Pro Val Asp Thr Leu His Pro Asp Gln Phe
 130 135 140
 Phe Gly Gln Lys Thr Val Met Lys Ala Pro Phe Ala Trp Glu Asp Trp
 145 150 155 160
 Tyr Gly Leu Ile Ala Cys Ser Phe Leu Ala Leu Pro Leu Leu Gly Leu
 165 170 175
 Leu Ile Tyr Leu Ile Ile Arg Ile Arg Asp Asn Lys Pro Ile Ile Arg
 180 185 190
 Lys Val Lys Val Glu Pro Lys Leu Pro Pro His Gln Leu Ala Met Lys
 195 200 205
 Glu Ile Glu Arg Ile Lys Thr Glu Lys Ile Trp Gln Lys Gly Gln Ser
 210 215 220
 Lys Glu Tyr Tyr Thr Glu Leu Thr Asp Ala Leu Arg Thr Tyr Ile Lys
 225 230 235 240
 Asn Arg Phe Gly Phe Asn Ala Leu Glu Met Thr Ser Ser Glu Ile Ile
 245 250 255
 Asp Lys Leu Leu Glu Phe Asn Asp Lys Glu Ala Ile Ser Asp Leu Lys
 260 265 270
 Tyr Leu Phe Gln Thr Ala Asp Leu Val Lys Phe Ala Lys His Asp Pro
 275 280 285
 Gln Met Asn Glu Asn Asp Ala Asn Leu Ile Asn Ala Ile Asp Phe Ile
 290 295 300
 Asn Glu Thr Lys Gln Leu Glu Glu Asn Gln Lys Pro Gln Pro Thr
 305 310 315 320
 Glu Ile Thr Ile Ile Glu Lys Arg Ser Leu Arg Thr Lys Ile Leu Leu
 325 330 335

Ile Cys Gly Ile Val Phe Leu Ser Ala Ala Leu Ile Ala Thr Phe Val
 340 345 350
 Tyr Ile Gly Leu Gln Leu Tyr Asn Leu Phe Gly
 355 360

<210> 5864
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 5864
 Asp Met Arg Thr Ile Thr Phe Asn Glu Leu Arg Lys Ile Lys Asp Ser
 1 5 10 15
 Leu Pro Ser Gly Ser Met His Arg Ile Ala Asp Glu Leu Asn Leu Asn
 20 25 30
 Val Asp Thr Val Arg Asn Phe Phe Gly Gly His Asn Phe Lys Glu Gly
 35 40 45
 Lys Ser Val Gly Ile His Leu Glu Pro Gly Pro Asp Gly Gly Leu Val
 50 55 60
 Met Ile Asp Asp Thr Thr Val Leu Asp Arg Ala Leu Arg Ile Leu Asp
 65 70 75 80
 Glu Leu Asn Met Ser Lys Glu Glu Ala Thr Glu Ser Val Gln Val
 85 90 95

<210> 5865
 <211> 232
 <212> PRT
 <213> B.fragilis

<400> 5865
 Ile Ser Arg Ala Ile Ile Ser Ser Ala Val Asn Leu Gly Glu Pro Ser
 1 5 10 15
 Ser Ser Ile Thr Phe Phe Lys Leu Ser Val Val Ser Cys Pro Val Ser
 20 25 30
 Pro Val Thr Trp Ile Gly Ser Ser Glu Phe Ser Thr Thr Leu Ser Asn
 35 40 45
 Pro Pro Ser Ser Arg Thr Ser Ala Met Asp Glu Pro Ser Thr Thr Ala
 50 55 60
 Ser Leu Pro Leu Cys Met Leu Thr Ser Ser Thr Val Ser Ser Met Ser
 65 70 75 80
 Ile Ser Ser Thr Thr Ser Val Leu Ser Asp Ser Phe Ile Thr Ser Glu
 85 90 95
 Thr Ser Ser Ala Thr Ser Thr Ser Asp Asp Thr Thr Ser Cys Pro Phe
 100 105 110
 Glu Val Ser Gly Ser Thr Phe Pro Phe Ala Ser Val Ser Thr Thr Phe
 115 120 125
 Ser Ser Ala Phe Ala Ser Ser Leu Ser Thr Val Ser Val Ile Asn Gly
 130 135 140
 Ser Ser Val Val Ser Asp Ile Phe Pro Asp Ser Ser Ser Asn Ser Ser
 145 150 155 160
 Ile Gly Val Ser Ser Lys Thr Val Phe Ser Phe Ser Thr Thr Val Ser
 165 170 175
 Lys Cys Glu Lys Gly Leu Phe Met Ile Ser Leu Lys Glu Gly Ser Gly
 180 185 190
 Val Lys Glu Ile Leu Val Cys Pro Ser Ile Leu Ile Arg Ser Pro Val
 195 200 205
 Leu Thr Phe Thr Leu Ser Arg Leu Leu Thr Pro Ile Asn Leu Asn Val
 210 215 220
 Pro Asn Pro Leu Ile Phe Thr Tyr

225

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<210> 5866

<211> 240

<212> PRT

<213> B.fragilis

<400> 5866

Val	Val	Met	Tyr	Met	Ser	Arg	Asn	Lys	Tyr	Ile	Leu	Phe	Ala	Leu	Leu
1				5					10					15	
Leu	Ser	Leu	Ser	Ala	Gly	Ala	Phe	Ala	Gln	Lys	Ala	Glu	Arg	Asp	Tyr
			20					25					30		
Ile	Arg	Lys	Gly	Asn	Arg	Leu	Phe	Lys	Asp	Ser	Val	Phe	Val	Asp	Ala
		35					40					45			
Glu	Val	Asn	Tyr	Arg	Lys	Ala	Leu	Glu	Ala	Asn	Pro	Lys	Ser	Thr	Ile
	50					55					60				
Ser	Met	Tyr	Asn	Leu	Gly	Asn	Thr	Leu	Ser	Gln	Gln	Gln	Lys	Phe	Lys
65					70					75				80	
Asp	Ala	Met	Glu	Gln	Tyr	Val	Ala	Ala	Thr	Ser	Ile	Glu	Lys	Asp	Lys
			85						90					95	
Ala	Lys	Leu	Gly	Gln	Ile	Tyr	His	Asn	Met	Gly	Val	Leu	Phe	Gln	Ser
		100						105					110		
Gly	Lys	Asp	Tyr	Gln	Lys	Ala	Val	Glu	Ala	Tyr	Lys	Met	Ser	Leu	Arg
		115					120					125			
Asn	Asn	Pro	Lys	Asp	Asp	Glu	Thr	Arg	Tyr	Asn	Leu	Ala	Leu	Ala	Gln
	130					135					140				
Lys	Leu	Leu	Lys	Asp	Gln	Gln	Gln	Asn	Gln	Gln	Asn	Gln	Asp	Gln	Asn
145					150					155				160	
Gln	Asp	Gln	Asn	Lys	Asp	Asp	Gln	Gln	Lys	Gln	Gln	Asp	Lys	Lys	Asp
			165						170					175	
Gln	Asn	Lys	Gln	Asn	Asp	Gln	Asn	Lys	Asp	Gln	Gln	Gln	Gln	Gln	Pro
		180						185						190	
Pro	Lys	Ser	Glu	Lys	Asn	Asp	Asn	Glu	Met	Ser	Lys	Glu	Asn	Ala	Glu
	195						200					205			
Gln	Leu	Leu	Asn	Ser	Val	Met	Gln	Asp	Glu	Lys	Gly	Val	Gln	Asp	Lys
	210					215					220				
Val	Lys	Lys	Gln	Gln	Thr	Leu	Gln	Gly	Arg	Arg	Leu	Glu	Lys	Asp	Trp
225					230					235					240

<210> 5867

<211> 63

<212> PRT

<213> B.fragilis

<400> 5867

Glu	Ile	Asp	Phe	Thr	Tyr	Phe	Ser	Phe	Cys	Val	Thr	Leu	Leu	Phe	Arg
1				5					10					15	
Ile	Arg	Ser	Ser	Lys	Lys	Lys	Arg	Leu	Pro	Asn	Phe	Ser	Asn	Gln	Ala
		20						25					30		
Thr	Pro	Phe	Thr	Lys	Ile	Phe	Ala	Lys	Lys	Asp	Leu	Phe	Asp	His	Tyr
		35					40					45			
Ile	Ile	Phe	Ser	Ile	Ser	Ser	Asn	Ser	Gly	Pro	Ile	Phe	Arg	Leu	
	50					55					60				

<210> 5868

<211> 355

<212> PRT

<213> B.fragilis

<400> 5868

Ile Leu Leu Leu Ser Leu Leu Leu His Arg Leu Asn Ile Lys Lys Arg
 1 5 10 15
 Met Ser Thr Ile Ile Leu Gly Ile Glu Ser Ser Cys Asp Asp Thr Ser
 20 25 30
 Ala Ala Val Ile Lys Asp Gly Tyr Leu Leu Ser Asn Val Val Ser Ser
 35 40 45
 Gln Ala Val His Glu Ala Tyr Gly Gly Val Val Pro Glu Leu Ala Ser
 50 55 60
 Arg Ala His Gln Gln Asn Ile Val Pro Val Val His Glu Ala Leu Lys
 65 70 75 80
 Arg Ala Gly Val Thr Lys Glu Glu Leu Ser Ala Val Ala Phe Thr Arg
 85 90 95
 Gly Pro Gly Leu Met Gly Ser Leu Leu Val Gly Val Ser Phe Ala Lys
 100 105 110
 Gly Phe Ala Arg Ser Leu Asn Ile Pro Met Ile Asp Val Asn His Leu
 115 120 125
 Thr Gly His Val Leu Ala His Phe Ile Lys Glu Glu Gly Glu Ala Asn
 130 135 140
 Glu Gln Pro Asp Phe Pro Phe Leu Cys Leu Leu Val Ser Gly Gly Asn
 145 150 155 160
 Ser Gln Ile Ile Leu Val Lys Ala Tyr Asn Asp Met Glu Ile Leu Gly
 165 170 175
 Gln Thr Ile Asp Asp Ala Ala Gly Glu Ala Ile Asp Lys Cys Ser Lys
 180 185 190
 Val Met Gly Leu Gly Tyr Pro Gly Gly Pro Ile Ile Asp Arg Leu Ala
 195 200 205
 Arg Gln Gly Asn Pro Lys Ala Tyr Thr Phe Ser Lys Pro His Ile Ser
 210 215 220
 Gly Leu Asp Tyr Ser Phe Ser Gly Leu Lys Thr Ser Phe Leu Tyr Ser
 225 230 235 240
 Leu Arg Asp Trp Met Lys Glu Asp Pro Asp Phe Ile Glu His His Lys
 245 250 255
 Asn Asp Leu Ala Ala Ser Leu Glu Ala Thr Val Val Asp Ile Leu Met
 260 265 270
 Asp Lys Leu Arg Lys Ala Ala Lys Gln Tyr Lys Ile Asn Glu Val Ala
 275 280 285
 Val Ala Gly Gly Val Ser Ala Asn Asn Gly Leu Arg Asn Ala Phe Arg
 290 295 300
 Glu His Ala Glu Lys Tyr Gly Trp Lys Ile Phe Ile Pro Lys Phe Ser
 305 310 315 320
 Tyr Thr Thr Asp Asn Ala Ala Met Ile Ala Ile Thr Gly Tyr Phe Lys
 325 330 335
 Tyr Gln Asp Lys Asp Phe Cys Ser Ile Glu Gln Pro Ala Tyr Ser Arg
 340 345 350
 Val Thr Leu
 355

<210> 5869

<211> 216

<212> PRT

<213> B.fragilis

<400> 5869

Arg Arg Tyr His Lys Ile Asp Lys Lys Met Phe Arg Phe Glu Glu Pro
 1 5 10 15
 Ala Tyr Leu Tyr Leu Leu Leu Leu Leu Pro Leu Leu Ala Ala Phe Tyr
 20 25 30
 Leu Tyr Ser Asn Tyr Arg Lys Arg Lys Ala Ile Arg Lys Phe Gly Asp

35	40	45
Pro Val Leu Met Ala Gln Leu Met Pro Asp Val Ser Lys Tyr Arg Pro		
50	55	60
Asp Val Lys Phe Trp Leu Leu Phe Thr Ala Ile Gly Leu Phe Ala Val		
65	70	75
Leu Leu Ala Arg Pro Gln Phe Gly Ser Lys Leu Glu Thr Val Lys Arg		
85	90	95
Lys Gly Val Glu Val Met Ile Ala Leu Asp Ile Ser Asn Ser Met Leu		
100	105	110
Ala Gln Asp Val Gln Pro Ser Arg Leu Glu Lys Ala Lys Arg Leu Ile		
115	120	125
Ser Lys Leu Val Asp Gly Met Glu Asn Asp Lys Val Gly Met Ile Val		
130	135	140
Phe Ala Gly Asp Ala Phe Thr Gln Leu Pro Ile Thr Ser Asp Tyr Ile		
145	150	155
Ser Ala Lys Met Phe Leu Glu Ser Ile Ser Pro Ser Leu Ile Ser Lys		
165	170	175
Gln Gly Thr Ala Ile Gly Ala Ala Ile Asn Leu Ala Ala Arg Ser Phe		
180	185	190
Thr Pro Gln Glu Gly Val Gly Arg Ala Ile Val Val Ile Thr Asp Gly		
195	200	205
Glu Asn His Glu Arg Gly Ser Cys		
210	215	

<210> 5870

<211> 327

<212> PRT

<213> B.fragilis

<400> 5870

Cys Ile Ile Gln Ile Ile Val Ile Met Gly Phe Phe Ser Phe Phe Ser		
1	5	10
Lys Glu Lys Lys Glu Thr Leu Asp Lys Gly Leu Ser Lys Thr Lys Glu		
20	25	30
Ser Val Phe Ser Lys Ile Ala Arg Ala Val Ala Gly Lys Ser Lys Val		
35	40	45
Asp Asp Glu Val Leu Asp Asn Leu Glu Glu Val Leu Ile Thr Ser Asp		
50	55	60
Val Gly Val Glu Thr Thr Leu Asn Ile Ile Lys Arg Ile Glu Lys Arg		
65	70	75
Ala Ala Glu Asp Lys Tyr Val Asn Thr Gln Glu Leu Asn Ser Ile Leu		
85	90	95
Arg Glu Glu Ile Ala Ala Leu Leu Thr Glu Asn Asn Ser Asp Asp Val		
100	105	110
Ala Asp Phe Asp Val Pro Val Glu Lys Lys Pro Tyr Val Ile Met Val		
115	120	125
Val Gly Val Asn Gly Val Gly Lys Thr Thr Thr Ile Gly Lys Leu Ala		
130	135	140
Tyr Gln Phe Lys Lys Ala Gly Lys Ser Val Tyr Leu Gly Ala Ala Asp		
145	150	155
Thr Phe Arg Ala Ala Ala Val Glu Gln Leu Val Ile Trp Gly Glu Arg		
165	170	175
Val Asp Val Pro Val Ile Lys Gln Lys Met Gly Ala Asp Pro Ala Ser		
180	185	190
Val Ala Phe Asp Thr Leu Ser Ser Ala Val Ala Asn Asn Ala Asp Val		
195	200	205
Val Ile Ile Asp Thr Ala Gly Arg Leu His Asn Lys Val Gly Leu Met		
210	215	220
Asn Glu Leu Thr Lys Ile Lys Asn Val Met Lys Lys Val Val Pro Asp		

2581

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225          230          235          240
Ala Pro Asn Glu Val Leu Leu Val Leu Asp Gly Ser Thr Gly Gln Asn
          245          250          255
Ala Phe Glu Gln Ala Lys Gln Phe Thr Leu Ala Thr Glu Val Thr Ala
          260          265          270
Met Ala Ile Thr Lys Leu Asp Gly Thr Ala Lys Gly Gly Val Val Ile
          275          280          285
Gly Ile Ser Asp Gln Phe Lys Ile Pro Val Lys Tyr Ile Gly Leu Gly
          290          295          300
Glu Gly Met Glu Asp Leu Gln Val Phe Arg Lys Lys Glu Phe Val Asp
305          310          315          320
Ser Leu Phe Gly Glu Asn Ala
          325

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<210> 5871

<211> 399

<212> PRT

<213> B.fragilis

<400> 5871

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Ile Arg Asp Lys Val Arg Ile Pro Ile Gly Lys Thr Ile Gly Ile Ser
1          5          10          15
Tyr Leu Leu Asn Ser Ile Asn Lys Arg Ile Met Glu Glu Lys Leu Val
          20          25          30
Thr Leu Ala Ile Leu Thr Tyr Thr Lys Ala Gln Ile Leu Lys Asn Val
          35          40          45
Leu Glu Asn Glu Gly Ile Glu Thr Tyr Ile His Asn Val Asn Gln Ile
          50          55          60
Gln Pro Val Val Ser Ser Gly Val Arg Leu Arg Ile Lys Glu Ser Asp
65          70          75          80
Leu Pro Arg Ala Leu Lys Ile Thr Glu Ser Ser Ala Trp Leu Ala Glu
          85          90          95
Ser Ile Val Gly Glu Lys Thr Pro Lys Val Glu His Arg Thr Lys Lys
          100          105          110
Val Leu Ile Pro Val Asp Phe Ser Asn Tyr Ser Met Lys Ala Cys Glu
          115          120          125
Phe Gly Phe Asn Phe Ala Lys Ser Phe Asp Ala Glu Val Ile Leu Leu
          130          135          140
His Val Tyr Phe Thr Pro Ile Tyr Ala Ser Ser Leu Pro Tyr Gly Asp
145          150          155          160
Val Phe Asn Tyr Gln Ile Ser Asp Glu Glu Thr Val Lys Asn Val Leu
          165          170          175
His Lys Val His Asp Asp Leu Asn Thr Leu Ser Glu Lys Ile Lys Gln
          180          185          190
Lys Val Ala Ser Gly Glu Phe Pro Asp Val Lys His Thr Cys Val Leu
          195          200          205
Arg Glu Gly Ile Pro Glu Glu Glu Ile Leu Arg Tyr Asn Lys Glu His
          210          215          220
Arg Pro Arg Ile Ile Ile Met Gly Thr Arg Gly Lys Asn Gln Lys Asp
225          230          235          240
Ile Asp Leu Ile Gly Ser Val Thr Ala Glu Ile Ile Glu Arg Ser His
          245          250          255
Thr Thr Val Leu Ala Ile Pro Glu Asn Thr Pro Phe Asn Arg Phe Asn
          260          265          270
Glu Val Lys Arg Ile Ala Phe Met Thr Asn Phe Asp Gln Arg Asp Leu
          275          280          285
Ile Ala Phe Asp Ser Phe Ile Asn Gly Leu Ser Pro Phe His Phe Ser
          290          295          300
Val Ser Leu Ile His Leu Ser Asp Val Lys Asp Thr Trp Asn Glu Ile

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305 310 315 320
 Lys Leu Ala Gly Ile Lys Asp Tyr Phe Gln Lys Gln Tyr Pro Asp Leu
 325 330 335
 Glu Ile Tyr Tyr Asp Val Val Met Ser Asn Asp Phe Leu Asn Ser Leu
 340 345 350
 Asp Asn Tyr Ile Lys Thr Asn Gln Ile Asp Ile Ile Thr Leu Thr Ser
 355 360 365
 Tyr Lys Arg Asn Ile Phe Ser Arg Leu Phe Asn Pro Gly Ile Ala Arg
 370 375 380
 Lys Met Ile Phe His Ser Asp Thr Pro Leu Leu Val Ile Asn Gly
 385 390 395

<210> 5872

<211> 122

<212> PRT

<213> B.fragilis

<400> 5872

Leu Leu Phe Asn Ala Phe Ile Gly Ile Phe Pro Ala Asn Thr Arg Phe
 1 5 10 15
 Thr Phe Ser Lys Thr Ala Ser Leu Lys Ile Ser Leu Val Pro Lys Tyr
 20 25 30
 Leu Gln Arg Val Cys Leu Val Ile Ser Ser Leu Val Gly Pro Lys Pro
 35 40 45
 Pro Val Thr Ser Thr Ile Phe Ala Leu Phe Ile Glu Ala Ser Thr Ala
 50 55 60
 Ser Ile Ile Ser Ser Ala Arg Ser Arg Thr Asp Thr Thr Arg Ile Thr
 65 70 75 80
 Ser Ile Pro Thr Leu Phe Asn Ser Arg Pro Ile His Ala Glu Leu Val
 85 90 95
 Ser Val Thr Cys Pro Ile Asn Ser Ser Ser Pro Ile Val Ile Ile Ser
 100 105 110
 Ala Asn Ile Gly Leu Leu Gln Ser Tyr Thr
 115 120

<210> 5873

<211> 615

<212> PRT

<213> B.fragilis

<400> 5873

Leu Met Ile Lys Thr Ser Asp Glu Met Arg Lys Leu Ile Phe Leu Leu
 1 5 10 15
 Ile Ala Leu Val Ala Met Thr Thr Gln Ala Gln Ala Asp Gly Lys Val
 20 25 30
 Val Phe Thr Ala Ser Ala Pro Asp Ala Val Val Val Gly Asp Gln Phe
 35 40 45
 Arg Leu Ser Tyr Thr Val Asn Thr Ile Lys Val Arg Asp Phe Arg Val
 50 55 60
 Pro Ser Ile Lys Gly Phe Glu Val Leu Met Gly Pro Asn Arg Ser Gln
 65 70 75 80
 Arg Met Gln Ser Ile Asn Gly Val Thr Asn Asn Ser Ile Thr Phe Thr
 85 90 95
 Tyr Ile Leu Met Ala Thr Ala Glu Gly Glu Tyr Ser Ile Pro Gly Ala
 100 105 110
 Thr Ile Thr Ala Asp Gly Asn Gln Met Val Ser Asn Ser Val Lys Ile
 115 120 125
 Lys Val Leu Pro Ser Asp Lys Thr Gly Asn Thr Ala Asp Gly Lys Gly
 130 135 140

610

615

<210> 5874

<211> 93

<212> PRT

<213> B.fragilis

<400> 5874

Asn	Tyr	Lys	Asn	Lys	Ile	Glu	Met	Ser	Lys	Ile	Cys	Gln	Ile	Thr	Gly
1				5					10					15	
Lys	Lys	Ala	Met	Ile	Gly	Asn	Asn	Val	Ser	His	Ser	Lys	Arg	Arg	Thr
			20					25					30		
Lys	Arg	Thr	Phe	Asp	Leu	Asn	Leu	Phe	Asn	Lys	Lys	Phe	Tyr	Tyr	Val
			35					40					45		
Glu	Gln	Asp	Cys	Trp	Ile	Ser	Leu	Ser	Leu	Cys	Ala	Ala	Gly	Leu	Arg
			50					55				60			
Ile	Ile	Asn	Lys	Lys	Gly	Leu	Asp	Ala	Ala	Leu	Asn	Asp	Ala	Val	Ala
65					70					75					80
Lys	Gly	Tyr	Cys	Asp	Trp	Lys	Thr	Ile	Lys	Val	Val	Gly			
				85					90						

<210> 5875

<211> 279

<212> PRT

<213> B.fragilis

<400> 5875

Val	Met	Lys	Lys	Ile	Leu	Phe	Ile	Ala	Leu	Gly	Leu	Leu	Met	Ala	Val
1				5					10					15	
Thr	Ser	Phe	Gly	Gln	Asp	Ser	Leu	Ile	Thr	Asp	Ser	Thr	Gln	Met	Ile
			20					25					30		
Gln	Gly	Asp	Thr	Val	Ser	Ile	His	Asn	Ala	Glu	Phe	Ser	Gly	Ser	Lys
			35					40					45		
Leu	Glu	Asp	Ala	Thr	Lys	Ala	Glu	Gly	Asp	Ser	Ala	Tyr	Ile	Arg	Asn
			50					55				60			
Asp	Phe	Ala	Ser	Ala	Ile	Gln	Ile	Tyr	Glu	Ser	Leu	Leu	Arg	Lys	Gly
65					70					75					80
Glu	Ser	Ala	Asp	Val	Tyr	Tyr	Asn	Leu	Gly	Asn	Ser	Tyr	Tyr	Lys	Ile
				85					90					95	
Asn	Glu	Ile	Ala	Lys	Ala	Ile	Leu	Asn	Tyr	Glu	Lys	Ala	Leu	Leu	Leu
			100					105					110		
Gln	Pro	Gly	Asn	Gly	Asp	Ile	Arg	Ala	Asn	Leu	Glu	Ile	Ala	Arg	Gly
			115					120					125		
Lys	Thr	Val	Asp	Lys	Val	Glu	Val	Val	Pro	Glu	Ile	Phe	Phe	Val	Thr
			130					135				140			
Trp	Thr	Lys	Ala	Leu	Ile	Asn	Ser	Met	Ser	Val	Asp	Ser	Trp	Ala	Ile
145					150					155					160
Trp	Gly	Ile	Val	Ser	Phe	Leu	Leu	Leu	Ile	Val	Ser	Leu	Tyr	Phe	Phe
				165					170					175	
Ile	Phe	Ser	Lys	Gln	Val	Val	Leu	Lys	Lys	Val	Gly	Phe	Ile	Thr	Gly
			180					185					190		
Ile	Ile	Phe	Leu	Ile	Val	Val	Val	Met	Ala	Asn	Ile	Phe	Ala	Ser	Lys
			195					200					205		
Gln	Lys	Glu	Glu	Leu	Leu	Asn	Arg	Asp	Thr	Ala	Ile	Ile	Met	Ser	Pro
			210				215				220				
Ser	Val	Thr	Val	Arg	Ser	Thr	Pro	Ser	Glu	Asn	Gly	Thr	Ser	Leu	Phe
225					230					235					240
Ile	Leu	His	Glu	Gly	His	Lys	Val	Asn	Ile	Lys	Asp	Asp	Ser	Met	Lys
				245					250						255

Asp Trp Lys Glu Ile Arg Leu Glu Asp Gly Lys Val Gly Trp Val Pro
 260 265 270
 Val Gly Ser Ile Glu Ile Ile
 275

<210> 5876
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 5876
 Lys Glu Glu Lys Leu Ile Met Ala Lys Lys Ala Lys Gly Asn Arg Val
 1 5 10 15
 Gln Val Ile Leu Glu Cys Thr Glu His Lys Asp Ser Gly Met Pro Gly
 20 25 30
 Thr Ser Arg Tyr Ile Thr Thr Lys Asn Arg Lys Asn Thr Thr Glu Arg
 35 40 45
 Leu Glu Leu Lys Lys Tyr Asn Pro Ile Leu Lys Arg Val Thr Val His
 50 55 60
 Lys Glu Ile Lys
 65

<210> 5877
 <211> 1129
 <212> PRT
 <213> B.fragilis

<400> 5877
 Tyr Leu Asn Asp Ala Lys Val Met Ile Lys Val Gly Phe Ile Thr Asn
 1 5 10 15
 Tyr Phe Ile Phe Leu Phe Ser Lys Ser Lys Gln Pro Pro Ile Arg Thr
 20 25 30
 Leu Lys Lys Thr Val Arg Trp Val Ile Gly Ile Ile Leu Gly Ile Tyr
 35 40 45
 Ile Gly Thr Ile Ile Leu Leu Asn Ile Pro Tyr Ile Gln Arg Asn Met
 50 55 60
 Thr Thr Phe Val Thr Lys Glu Leu Ser Arg Thr Leu Gly Thr Glu Leu
 65 70 75 80
 Thr Ile Gly Lys Ile Asp Ile Gly Leu Leu Asn Arg Ile Ile Ile Asp
 85 90 95
 Asp Val Leu Leu Asp Asp Gln Ser Gly Lys Glu Met Leu Lys Ile Thr
 100 105 110
 Arg Leu Ser Ala Lys Phe Asp Ile Ile Pro Leu Phe Asn Gly Lys Ile
 115 120 125
 Thr Ile Ser Ser Val Gln Leu Phe Gly Phe Asn Ile Asn Leu Asn Lys
 130 135 140
 Pro Ala Pro His Met Glu Pro Asn Phe Lys Phe Val Leu Asp Ala Phe
 145 150 155 160
 Ala Ser Lys Asp Thr Val Lys Thr Lys Lys Asp Ile Asp Leu Arg Ile
 165 170 175
 Asn Ser Ile Leu Ile Arg Arg Gly Lys Leu Ser Tyr Asp Val Leu Ser
 180 185 190
 Glu Glu Glu Thr Pro Gly Lys Phe Asn Pro Gln His Ile Lys Leu His
 195 200 205
 Asn Ile Ile Ala Asn Ile Ser Leu Lys Ala Leu Gln Asn Asp Ser Ile
 210 215 220
 Asn Ala Ala Ile Lys Arg Leu Ser Val Asp Glu Gln Ser Gly Phe Glu
 225 230 235 240
 Leu Arg Lys Leu Ser Leu Lys Val Ile Ala Asn Asn Lys Gly Met Lys

Gln Tyr Gln Asn Thr Phe Ile Glu Ser Gly Leu Val Leu Cys Glu Asn
 725 730 735
 Pro Thr Asp Gln Phe Lys Ala Lys Val Arg Phe Asn Asn Leu Lys Lys
 740 745 750
 Glu Ser Ala Val Ser Ile Ser Leu Asp Ala Gln Ala Lys Asn Asp Thr
 755 760 765
 Ile Asn Ala Asn Ile Asn Trp Gly Asn Asn Ala Ile Ser Thr Tyr Ser
 770 775 780
 Gly Arg Leu Ser Ala Ala Ala Ser Phe Phe Arg Ala Ala Glu Glu Lys
 785 790 795 800
 Ser Pro Leu Lys Thr Val Val Asp Ile Lys Gln Thr Asp Ile Ile Leu
 805 810 815
 Asn Asp Thr Leu Trp Gln Val His Pro Ser Gln Val Val Val Asp Ser
 820 825 830
 Gly Lys Ile Asp Val Asn Asp Phe Tyr Phe Ser His Gln Asp Arg His
 835 840 845
 Ile Arg Ile Asn Gly Arg Ile Ser Glu Gln Ala Lys Asp Thr Leu Lys
 850 855 860
 Val Glu Leu Lys Asp Ile Asn Val Gly Tyr Val Phe Asp Val Val Asn
 865 870 875 880
 Phe Asp Asp Val Asp Phe Lys Gly Asp Ala Thr Gly Thr Ala Tyr Ala
 885 890 895
 Ser Gly Ile Leu Lys Glu Pro Val Met Asn Thr Arg Leu His Phe Lys
 900 905 910
 Asn Phe Thr Phe Asn Asp Ala Ser Leu Gly Ala Met Asp Ile Tyr Gly
 915 920 925
 Ala Trp Lys Asn Asp Met Arg Ala Ile Phe Leu Asp Ala His Met Glu
 930 935 940
 Glu Glu Gly Val Ser Lys Thr His Val Ile Gly His Val Tyr Pro Leu
 945 950 955 960
 Lys Pro Glu Ser Lys Leu Asp Leu Asn Ile Glu Thr Asp His Thr Asn
 965 970 975
 Ile Gln Phe Leu Gln Tyr Phe Met Arg Ser Ile Val Glu Asp Leu His
 980 985 990
 Gly Arg Thr Ser Gly Lys Ala His Phe Tyr Gly Lys Phe Lys Ala Leu
 995 1000 1005
 Asn Ile Glu Gly Asn Leu Met Thr Asp Ala Ser Leu Lys Ile Gly Ile
 1010 1015 1020
 Leu Asn Thr Ser Phe Thr Val Thr Asp Thr Ile Arg Leu Ser Thr Ser
 1025 1030 1035 1040
 Gly Ile Ser Phe Asp Asn Ile Arg Ile Ala Asp Met Glu Gly His Gln
 1045 1050 1055
 Gly Thr Met Asn Gly Lys Leu Asn Phe Arg His Phe Arg Asp Leu Ser
 1060 1065 1070
 Tyr His Phe Glu Phe Asn Val Asn Asn Met Leu Leu Met Asn Thr Lys
 1075 1080 1085
 Glu Asn Pro Asp Ile Asn Phe Tyr Gly Lys Val Tyr Gly Thr Gly Asn
 1090 1095 1100
 Ala Met Leu Ile Gly Asn Pro Gln Glu Leu Gln Val Asn Ala Ala Val
 1105 1110 1115 1120
 Thr Thr Asn Arg Asn Thr Asn Phe Val
 1125

<210> 5878

<211> 492

<212> PRT

<213> B.fragilis

<400> 5878

Lys Ile Ser Leu Lys Lys His Phe Arg Met Asn Glu Lys Leu Thr Ile
 1 5 10 15
 Gln Asp Leu Val Glu Leu Leu Val Asn Arg His Glu Val Ser Gln Glu
 20 25 30
 Asp Ala Asp Val Phe Val Arg Glu Phe Phe Leu Leu Ile Glu Gln Ala
 35 40 45
 Leu Asp Ala Asp Gln Tyr Val Lys Ile Lys Gly Leu Gly Thr Phe Lys
 50 55 60
 Leu Ile Gly Val Asn Ser Arg Glu Ser Val Asn Val Asn Thr Gly Glu
 65 70 75 80
 Arg Ile Lys Ile Glu Gly His Thr Lys Ile Ser Phe Thr Pro Asp Pro
 85 90 95
 Ser Leu Arg Asp Ile Ile Asn Arg Pro Phe Ser His Phe Glu Thr Val
 100 105 110
 Val Leu Asn Glu Asn Thr Val Leu Glu Asp Thr Pro Ile Glu Glu Leu
 115 120 125
 Glu Glu Glu Ser Gly Asn Ile Ser Glu Thr Thr Glu Leu Pro Leu Ile
 130 135 140
 Thr Glu Thr Val Glu Arg Glu Glu Ala Lys Ala Glu Glu Lys Val Val
 145 150 155 160
 Glu Thr Glu Ala Asn Gly Lys Val Glu Pro Glu Thr Ser Lys Gly Gln
 165 170 175
 Asp Val Val Ser Ser Asp Val Glu Val Ala Glu Asp Val Ser Glu Val
 180 185 190
 Met Lys Glu Ser Glu Arg Thr Glu Val Val Asp Asp Ile Asp Ile Leu
 195 200 205
 Glu Thr Val Glu Asp Val Ser Ile His Lys Gly Ser Glu Ala Val Val
 210 215 220
 Glu Gly Ser Ser Ile Ala Glu Val Arg Glu Glu Gly Gly Leu Asp Lys
 225 230 235 240
 Val Val Glu Asn Ser Glu Glu Pro Ile Gln Val Thr Gly Asp Thr Gly
 245 250 255
 Gln Glu Thr Thr Asp Asn Leu Lys Lys Val Ile Glu Asp Glu Gly Ser
 260 265 270
 Pro Lys Leu Thr Ala Glu Glu Ile Ile Ala Arg Glu Ile Gln Lys Ala
 275 280 285
 Glu Val Ser Thr Ile Pro Val Lys Lys Glu Lys Arg Pro Lys Lys Glu
 290 295 300
 Val Lys Pro Glu Asn Gln Lys Ser Pro Val Pro Tyr Leu Ile Val Ile
 305 310 315 320
 Ile Val Val Val Met Ser Leu Cys Gly Ala Ala Leu Val Phe Ile Tyr
 325 330 335
 Tyr Pro Asp Leu Phe Ser Lys Lys Glu Ser Glu Gln Ser Ile Thr Thr
 340 345 350
 Glu Thr Val Glu Lys Lys Glu Pro Ile Arg Glu Ile Pro Leu Asp Thr
 355 360 365
 Val Ala Lys Ala Asp Thr Ile Val Lys Val Val Ala Lys Thr Pro Asn
 370 375 380
 Gln Gln Glu Ile Lys Gln Met Ser Glu Arg Val Asn Val Ser Glu Lys
 385 390 395 400
 Val Asp Lys Thr Ser Glu Ser Glu Ser Val Ser Arg Glu Lys Ser Thr
 405 410 415
 Lys Thr Val Ala Ile Pro Val Lys Pro Asp Ser Val Asn Tyr Thr Ile
 420 425 430
 Thr Gly Thr Lys Ala Thr Tyr Thr Ile Lys Glu Gly Glu Thr Leu Thr
 435 440 445
 Arg Val Ser Leu Arg Phe Tyr Gly Thr Lys Asp Leu Trp Pro Tyr Ile
 450 455 460
 Val Lys His Asn Arg Gly Val Ile Lys Asn Pro Asn Asn Val Pro Tyr

465 470 475 480
 Gly Thr Val Leu Lys Ile Pro Glu Leu Val Lys Lys
 485 490

<210> 5879
 <211> 847
 <212> PRT
 <213> B.fragilis

<400> 5879
 Arg Arg Leu Leu Glu Gln Asp Arg Ile Ile Lys Ile Asn Ile Glu Glu
 1 5 10 15
 Glu Met Lys Ser Ser Tyr Ile Asp Tyr Ser Met Ser Val Ile Val Ser
 20 25 30
 Arg Ala Leu Pro Asp Val Arg Asp Gly Phe Lys Pro Val His Arg Arg
 35 40 45
 Ile Leu Tyr Gly Met Met Glu Leu Gly Asn Thr Ser Asp Lys Pro Tyr
 50 55 60
 Lys Lys Ser Ala Arg Ile Val Gly Glu Val Leu Gly Lys Tyr His Pro
 65 70 75 80
 His Gly Asp Ser Ser Val Tyr Phe Ala Met Val Arg Met Ala Gln Glu
 85 90 95
 Trp Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly Asn Phe Gly Ser
 100 105 110
 Val Asp Gly Asp Ser Pro Ala Ala Met Arg Tyr Thr Glu Ala Arg Leu
 115 120 125
 Asn Lys Leu Gly Glu Glu Met Met Gln Asp Leu Tyr Lys Glu Thr Val
 130 135 140
 Asp Phe Glu Pro Asn Phe Asp Asn Thr Leu Met Glu Pro Lys Val Met
 145 150 155 160
 Pro Thr Arg Ile Pro Asn Leu Leu Val Asn Gly Ala Ser Gly Ile Ala
 165 170 175
 Val Gly Met Ala Thr Asn Met Pro Pro His Asn Leu Ser Glu Val Ile
 180 185 190
 Asp Ala Cys Glu Ala Tyr Leu Asp Asn Lys Asp Val Thr Val Glu Glu
 195 200 205
 Leu Met Glu Tyr Val Lys Ala Pro Asp Phe Pro Thr Gly Gly Tyr Ile
 210 215 220
 Tyr Gly Ile Ser Gly Val Arg Glu Ala Tyr Leu Thr Gly Arg Gly Arg
 225 230 235 240
 Val Val Met Arg Ala Lys Ala Glu Ile Glu Ser Gly Gln Thr His Asp
 245 250 255
 Lys Ile Val Val Thr Glu Ile Pro Tyr Asn Val Asn Lys Ala Glu Leu
 260 265 270
 Ile Lys Ala Ile Ala Asp Leu Val Asn Glu Lys Arg Ile Glu Gly Ile
 275 280 285
 Ser Asn Ala Asn Asp Glu Ser Asp Arg Glu Gly Met Arg Ile Val Ile
 290 295 300
 Asp Ile Lys Arg Asp Ala Asn Ala Ser Val Val Leu Asn Lys Leu Tyr
 305 310 315 320
 Lys Met Thr Ala Leu Gln Thr Ser Phe Gly Val Asn Asn Val Ala Leu
 325 330 335
 Val Asn Gly Arg Pro Lys Met Leu Asn Leu Arg Asp Leu Ile Val Tyr
 340 345 350
 Phe Val Glu His Arg His Asp Val Val Ile Arg Arg Thr Gln Phe Asp
 355 360 365
 Leu Arg Lys Ala Lys Glu Arg Ala His Ile Leu Glu Gly Leu Ile Ile
 370 375 380
 Ala Ser Asp Asn Ile Asp Glu Val Ile Arg Ile Ile Arg Ala Ala Lys

385					390					395				400
Thr	Pro	Asn	Asp	Ala	Ile	Ser	Gly	Leu	Met	Glu	Arg	Phe	Asn	Leu
				405					410					415
Glu	Ile	Gln	Ala	Arg	Ala	Ile	Val	Glu	Met	Arg	Leu	Arg	Gln	Leu
			420					425					430	
Gly	Leu	Met	Gln	Asp	Gln	Leu	His	Ala	Glu	Tyr	Glu	Glu	Val	Met
		435				440						445		
Gln	Ile	Ala	Tyr	Leu	Glu	Ser	Ile	Leu	Ala	Asp	Asp	Glu	Val	Cys
	450					455				460				
Lys	Val	Ile	Lys	Asp	Glu	Leu	Leu	Glu	Val	Arg	Ala	Lys	Tyr	Gly
465				470					475					480
Glu	Arg	Arg	Ser	Glu	Ile	Val	Tyr	Ser	Ser	Glu	Glu	Phe	Asn	Pro
			485					490						495
Asp	Phe	Tyr	Ala	Asp	Asp	Gln	Met	Ile	Ile	Thr	Ile	Ser	His	Met
			500				505						510	
Tyr	Ile	Lys	Arg	Thr	Pro	Leu	Thr	Glu	Phe	Arg	Ala	Gln	Asn	Arg
	515					520						525		
Gly	Val	Gly	Ser	Lys	Gly	Thr	Glu	Thr	Arg	Asp	Glu	Asp	Phe	Val
	530				535					540				
His	Ile	Tyr	Pro	Ala	Thr	Met	His	Asn	Thr	Met	Met	Phe	Phe	Thr
545				550					555					560
Lys	Gly	Lys	Cys	Tyr	Trp	Leu	Lys	Val	Tyr	Glu	Ile	Pro	Glu	Gly
			565					570						575
Lys	Asn	Ser	Lys	Gly	Arg	Ala	Ile	Gln	Asn	Leu	Leu	Asn	Ile	Asp
			580				585					590		Ser
Asp	Asp	Ala	Val	Asn	Ala	Tyr	Leu	Arg	Val	Lys	Ser	Leu	Asn	Asp
		595				600					605			Gln
Glu	Tyr	Ile	Asn	Ser	His	Tyr	Val	Leu	Phe	Cys	Thr	Lys	Asn	Gly
	610				615					620				Val
Ile	Lys	Lys	Thr	Ser	Leu	Glu	Gln	Tyr	Ser	Arg	Pro	Arg	Gln	Asn
625				630					635					640
Val	Asn	Ala	Ile	Thr	Ile	Arg	Glu	Asp	Asp	Arg	Val	Ile	Glu	Val
			645					650						655
Met	Thr	Asn	Gly	Asn	Asn	Glu	Ile	Ile	Ile	Ala	Asn	Arg	Asn	Gly
		660					665					670		Arg
Ala	Ile	Arg	Phe	His	Glu	Ala	Ala	Val	Arg	Val	Met	Gly	Arg	Thr
	675				680						685			Ala
Thr	Gly	Val	Arg	Gly	Ile	Thr	Leu	Asp	Asp	Asp	Gly	Gln	Asp	Glu
	690				695					700				Val
Ile	Gly	Met	Ile	Cys	Ile	Lys	Asp	Leu	Glu	Thr	Glu	Ser	Val	Met
705				710					715					720
Val	Ser	Glu	Gln	Gly	Tyr	Gly	Lys	Arg	Ser	Asp	Ile	Glu	Asp	Tyr
			725					730						735
Lys	Thr	Asn	Arg	Gly	Gly	Lys	Gly	Val	Lys	Thr	Met	Asn	Ile	Thr
		740					745					750		Glu
Lys	Thr	Gly	Lys	Leu	Val	Thr	Ile	Lys	Ser	Val	Thr	Asp	Glu	Asn
	755					760					765			Asp
Leu	Met	Ile	Ile	Asn	Lys	Ser	Gly	Ile	Thr	Ile	Arg	Leu	Lys	Val
	770				775					780				Ala
Asp	Val	Arg	Ile	Met	Gly	Arg	Ala	Thr	Gln	Gly	Val	Arg	Leu	Ile
785				790					795					Asn
Leu	Glu	Lys	Arg	Asn	Asp	Gln	Ile	Gly	Ser	Val	Cys	Lys	Val	Thr
			805					810						815
Glu	Ser	Leu	Glu	Asp	Glu	Val	Pro	Glu	Glu	Glu	Arg	Glu	Gly	Asn
		820						825					830	Ile
Pro	Ser	Asp	Pro	Glu	Thr	Asn	Thr	Pro	Val	Asn	Glu	Thr	Glu	Glu
		835				840					845			

<211> 331
 <212> PRT
 <213> B.fragilis

<400> 5880

```

Ile Ile Asn Arg Met Val Phe Ala Asn Ile Glu Tyr Leu Phe Leu Leu
1           5           10           15
Leu Leu Leu Val Pro Tyr Ile Val Trp Tyr Ile Met Lys Arg Lys Lys
          20           25           30
Thr Glu Pro Thr Leu Gln Ile Ser Asp Ala Arg Val Tyr Ala His Ala
          35           40           45
Pro Lys Ser Tyr Lys Asn Tyr Leu Leu His Val Pro Phe Gly Leu Arg
          50           55           60
Ile Ile Thr Leu Ile Leu Ile Ile Leu Val Leu Ala Arg Pro Gln Thr
65           70           75           80
Thr Asn Ser Trp Gln Asn Ser Glu Ile Glu Gly Ile Asp Ile Met Leu
          85           90           95
Ala Ile Asp Val Ser Thr Ser Met Leu Ala Glu Asp Leu Lys Pro Asn
          100          105          110
Arg Leu Glu Ala Ala Lys Asp Val Ala Ala Glu Phe Ile Asn Gly Arg
          115          120          125
Pro Asn Asp Asn Ile Gly Ile Thr Leu Phe Ala Gly Glu Ser Phe Thr
          130          135          140
Gln Cys Pro Leu Thr Val Asp His Ala Val Leu Leu Asn Leu Phe Gln
145          150          155          160
Gly Ile Gln Cys Asp Ile Ile Glu Asp Gly Thr Ala Val Gly Met Gly
          165          170          175
Ile Ala Asn Ala Val Thr Arg Leu Lys Asp Ser Lys Ala Lys Ser Lys
          180          185          190
Val Ile Ile Leu Leu Thr Asp Gly Thr Asn Asn Lys Gly Asp Ile Ser
          195          200          205
Pro Leu Thr Ala Ala Glu Ile Ala Lys Ser Phe Gly Ile Arg Val Tyr
          210          215          220
Thr Ile Gly Val Gly Thr Asn Gly Met Ala Pro Tyr Pro Val Arg Val
225          230          235          240
Gly Gly Thr Thr Gln Tyr Ile Asn Thr Pro Val Glu Ile Asp Glu Lys
          245          250          255
Thr Leu Thr Gln Ile Ala Gly Thr Thr Asp Gly Asn Tyr Phe Arg Ala
          260          265          270
Thr Ser Asn Ser Lys Leu Lys Glu Val Tyr Glu Glu Ile Asp Lys Leu
          275          280          285
Glu Lys Thr Lys Leu Asn Val Lys Glu Tyr Ser Lys Arg Gln Glu Glu
          290          295          300
Tyr Arg Trp Phe Ala Leu Ala Ala Phe Leu Cys Ile Leu Leu Glu Val
305          310          315          320
Leu Leu Arg Asn Ser Ile Leu Lys Lys Ile Pro
          325          330

```

<210> 5881
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 5881

```

Met Glu Thr Ser Glu Ile Leu Lys Lys Val Arg Arg Ile Glu Ile Lys
1           5           10           15
Thr Arg Gly Leu Ser Asn Asn Ile Phe Ala Gly Gln Tyr His Ser Ala
          20           25           30
Phe Lys Gly Arg Gly Met Ala Phe Ser Glu Val Arg Glu Tyr Gln Phe

```

```

      35              40              45
Gly Asp Asp Ile Arg Asp Ile Asp Trp Asn Val Thr Ala Arg Phe Asn
  50              55              60
Lys Pro Phe Val Lys Val Phe Glu Glu Glu Arg Glu Leu Thr Val Met
  65              70              75              80
Leu Met Val Asp Val Ser Gly Ser Leu Glu Phe Gly Thr Val Lys Gln
      85              90              95
Leu Lys Lys Asp Met Val Thr Glu Ile Ala Ala Thr Leu Ala Phe Ser
  100              105              110
Ala Ile Gln Asn Asn Asp Lys Ile Gly Val Ile Phe Phe Ser Asp Arg
  115              120              125
Ile Glu Lys Phe Ile Pro Pro Lys Lys Gly Arg Lys His Ile Leu Tyr
  130              135              140
Ile Ile Arg Glu Leu Ile Asp Phe Lys Pro Asp Ser Arg Arg Thr Asn
  145              150              155              160
Ile Arg Leu Ala Leu Glu Tyr Leu Thr Asn Val Met Lys Arg Arg Cys
      165              170              175
Thr Ala Phe Ile Leu Ser Asp Phe Ile Asp Gln Glu Asn Phe Lys Asn
      180              185              190
Ala Met Thr Ile Ala Asn Arg Lys His Asp Val Val Ala Ile Gln Val
  195              200              205
Tyr Asp Arg Arg Val Ala Glu Leu Pro Ala Val Gly Leu Met Arg Ile
  210              215              220
Lys Asp Ala Glu Thr Gly His Glu Gln Trp Ile Asp Thr Ser Ser Ala
  225              230              235              240
Gly Val Arg Arg Ala His His Glu Trp Trp Val Asn Lys Gln Thr Glu
      245              250              255
Leu Asp Glu Thr Phe Thr Lys Ser Asn Val Asp Ser Val Ser Val Arg
      260              265              270
Thr Asp Gln Asp Tyr Val Lys Ala Leu Leu Asn Leu Phe Ala Lys Arg
      275              280              285
Asn

```

<210> 5882

<211> 454

<212> PRT

<213> B.fragilis

<400> 5882

```

Gly Tyr Gly Arg Pro Thr Gly Val Pro Gln Glu Arg Ile Cys Arg Leu
  1              5              10              15
Leu Ile Trp Arg Glu Cys Met Lys Arg Lys Thr Ile Asp Ile Ile Thr
      20              25              30
Leu Gly Cys Ser Lys Asn Leu Val Asp Ser Glu Gln Leu Met Arg Gln
      35              40              45
Leu Glu Glu Ala Gly Tyr Asp Val Thr His Asp Ser Glu Lys Pro Thr
      50              55              60
Gly Glu Ile Ala Val Ile Asn Thr Cys Gly Phe Ile Gly Asp Ala Lys
      65              70              75              80
Glu Glu Ser Ile Asn Met Ile Leu Glu Phe Ala Gln Glu Lys Glu Glu
      85              90              95
Gly Asn Leu Glu Lys Leu Phe Val Met Gly Cys Leu Ser Glu Arg Tyr
      100              105              110
Leu Lys Glu Leu Ala Ile Glu Ile Pro Gln Val Asp Lys Phe Tyr Gly
      115              120              125
Lys Phe Asn Trp Lys Gly Leu Leu Gln Asp Leu Gly Lys Ala Tyr His
      130              135              140
Glu Glu Leu His Ile Glu Arg Thr Leu Thr Thr Pro Lys His Tyr Ala

```



```

145          150          155          160
Tyr Leu Lys Ile Ser Glu Gly Cys Asp Arg Lys Cys Ser Tyr Cys Ala
          165          170          175
Ile Pro Ile Ile Thr Gly Arg His Val Ser Arg Pro Ile Glu Glu Ile
          180          185          190
Leu Asp Glu Val Arg Tyr Leu Val Ser Asn Gly Val Lys Glu Phe Gln
          195          200          205
Val Ile Ala Gln Glu Leu Thr Tyr Tyr Gly Val Asp Leu Tyr Lys Lys
          210          215          220
Gln Met Leu Pro Glu Leu Ile Glu Arg Ile Ser Glu Ile Pro Gly Val
225          230          235          240
Glu Trp Ile Arg Leu His Tyr Ala Tyr Pro Ala His Phe Pro Glu Glu
          245          250          255
Leu Phe Arg Val Met Arg Glu Arg Asp Asn Val Cys Lys Tyr Met Asp
          260          265          270
Ile Ala Leu Gln His Ile Ser Asp Asn Met Leu Gln Arg Met Arg Arg
          275          280          285
His Val Thr Lys Lys Glu Thr Tyr Arg Leu Ile Glu Gln Phe Arg Lys
          290          295          300
Glu Val Pro Gly Ile His Leu Arg Thr Thr Leu Met Val Gly His Pro
305          310          315          320
Gly Glu Thr Glu Glu Asp Phe Glu Glu Leu Lys Glu Phe Val Arg Lys
          325          330          335
Val Arg Phe Asp Arg Met Gly Ala Phe Thr Tyr Ser Glu Glu Glu Gly
          340          345          350
Thr Tyr Ala Ala Ala Asn Tyr Glu Asp Ser Ile Pro Gln Glu Leu Lys
          355          360          365
Gln Ala Arg Leu Asp Glu Leu Met Ala Ile Gln Gln Gly Ile Ser Thr
          370          375          380
Glu Leu Ser Ala Ser Lys Val Gly Gln Lys Met Lys Val Ile Ile Asp
385          390          395          400
Arg Ile Glu Gly Glu Tyr Tyr Ile Gly Arg Thr Glu Phe Asp Ser Pro
          405          410          415
Glu Val Asp Pro Glu Val Leu Ile Arg Cys Glu Gly Asp Asn Leu Met
          420          425          430
Ile Gly Asn Phe Tyr Gln Val Gln Val Ile Asp Ser Asp Glu Phe Asp
          435          440          445
Leu Phe Gly Glu Ile Ile
          450

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<210> 5883

<211> 415

<212> PRT

<213> B.fragilis

<400> 5883

```

Leu Cys Lys Ser Pro Met Phe Ala Glu Ile Ile Thr Ile Gly Asp Glu
1          5          10          15
Leu Leu Ile Gly Gln Val Thr Asp Thr Asn Ser Ala Trp Met Gly Arg
          20          25          30
Glu Leu Asn Lys Val Gly Ile Glu Val Ile Arg Val Val Ser Val Arg
          35          40          45
Asp Arg Ala Asp Glu Ile Ile Glu Ala Val Asp Ala Ser Met Lys Arg
          50          55          60
Ala Asn Ile Val Leu Val Thr Gly Gly Leu Gly Pro Thr Lys Asp Asp
65          70          75          80
Ile Thr Lys Gln Thr Leu Cys Lys Tyr Phe Gly Thr Arg Leu Ile Phe
          85          90          95
Ser Glu Ala Val Phe Glu Asn Val Lys Arg Val Leu Ala Gly Lys Ile

```

100	105	110
Pro Met Asn Ala Leu Asn Lys Ser Gln Ala Met Val	Pro Glu Asp Cys	
115	120	125
Ile Val Ile Asn Asn Arg Val Gly Ser Ala Ser Val	Ser Trp Phe Glu	
130	135	140
Lys Asp Gly Lys Val Leu Val Ser Met Pro Gly Val	Pro Gln Glu Met	
145	150	155
Thr Thr Val Met Ser Glu Glu Val Ile Pro Arg Leu	Cys Ala Lys Phe	
165	170	175
Arg Thr Gly Ala Ile Ile His Arg Thr Phe Thr Val	Gln Asn Tyr Pro	
180	185	190
Glu Ser Val Leu Ala Glu Lys Leu Glu Ser Trp Glu	Met Ala Leu Pro	
195	200	205
Ala Cys Leu Lys Leu Ala Tyr Leu Pro Lys Pro Gly	Leu Ile Arg Leu	
210	215	220
Arg Leu Thr Gly Arg Gly Gln Asn Arg Ser Glu Ile	Glu Ala Cys Val	
225	230	235
Asn Thr Glu Ser Ala Lys Leu Glu Ala Ile Leu Gly	Glu Asp Ile Leu	
245	250	255
Asp Glu Glu Asp Thr Pro Ile Glu Ile Leu Ile Gly	Glu Leu Leu Lys	
260	265	270
Lys Lys Asn Leu Thr Leu Ser Thr Ala Glu Ser Cys	Thr Gly Gly Ser	
275	280	285
Ile Ala Ala Arg Ile Thr Ser Val Ala Gly Ser Ser	Glu Tyr Phe Lys	
290	295	300
Gly Ser Ile Val Ala Tyr Ala Asn Glu Val Lys Thr	Glu Leu Leu Ser	
305	310	315
Val Ser Met Glu Thr Leu Glu Lys Arg Gly Ala Val	Ser Glu Glu Thr	
325	330	335
Val Ile Glu Met Val Lys Gly Ala Met Lys Ala Leu	Lys Thr Asp Cys	
340	345	350
Ala Val Ala Thr Ser Gly Ile Ala Gly Pro Ser Gly	Gly Thr Glu Glu	
355	360	365
Lys Pro Val Gly Thr Val Trp Ile Ala Ala Ala Tyr	Lys Ser Glu Ile	
370	375	380
Cys Thr Met Lys Gln Glu Thr Asn Arg Gly Arg Glu	Met Asn Val Glu	
385	390	395
Arg Ala Ser Asn Asn Ala Leu Leu Leu Leu Arg Lys	Leu Val Lys	
405	410	415

<210> 5884

<211> 334

<212> PRT

<213> B.fragilis

<400> 5884

Leu Val Phe Met Ala Glu Ser Ile Asp Ile Arg Glu Leu Asn Glu Arg	
1	15
Ile Glu Arg Gln Ser Ala Phe Val Thr Asn Leu Thr Thr Gly Met Asp	
20	30
Gln Ile Ile Val Gly Gln Lys His Leu Val Glu Ser Leu Leu Ile Gly	
35	45
Leu Leu Ser Asp Gly His Val Leu Leu Glu Gly Val Pro Gly Leu Ala	
50	60
Lys Thr Leu Ala Ile Lys Thr Leu Ala Ser Leu Ile Asp Ala Lys Tyr	
65	80
Ser Arg Ile Gln Phe Thr Pro Asp Leu Leu Pro Ala Asp Val Val Gly	
85	95
Thr Met Val Tyr Ser Gln Lys Asp Glu Ser Phe Gln Val Lys Lys Gly	

```

      100              105              110
Pro Ile Phe Ala Asn Phe Val Leu Ala Asp Glu Ile Asn Arg Ala Pro
      115              120              125
Ala Lys Val Gln Ser Ala Leu Leu Glu Ala Met Gln Glu Arg Gln Val
      130              135              140
Thr Ile Gly Lys Glu Thr Phe Leu Leu Pro Glu Pro Phe Leu Val Leu
      145              150              155              160
Ala Thr Gln Asn Pro Ile Glu Gln Glu Gly Thr Tyr Pro Leu Pro Glu
      165              170              175
Ala Gln Val Asp Arg Phe Met Leu Lys Val Ile Ile Asp Tyr Pro Lys
      180              185              190
Gln Glu Glu Glu Lys Leu Ile Ile Arg Gln Asn Ile Asn Gly Glu Lys
      195              200              205
Phe Asn Val Lys Pro Ile Leu Lys Ala Glu Glu Ile Ile Glu Ala Arg
      210              215              220
Lys Val Val Arg Gln Val Tyr Leu Asp Glu Lys Ile Glu Arg Tyr Ile
      225              230              235              240
Val Asp Ile Val Phe Ala Thr Arg Tyr Pro Glu Lys Tyr Asp Leu Lys
      245              250              255
Glu Leu Lys Asp Met Ile Gly Phe Gly Gly Ser Pro Arg Ala Ser Ile
      260              265              270
Asn Leu Ala Leu Ala Ala Arg Thr Tyr Ala Phe Ile Lys Arg Arg Gly
      275              280              285
Tyr Val Ile Pro Glu Asp Val Arg Ala Val Ala His Asp Val Leu Arg
      290              295              300
His Arg Ile Gly Leu Thr Tyr Glu Ala Glu Ala Ser Asn Val Thr Ser
      305              310              315              320
Asp Glu Ile Val Ser Lys Ile Leu Asn Lys Val Glu Val Pro
      325              330

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<210> 5885

<211> 418

<212> PRT

<213> B.fragilis

<400> 5885

```

Asn Arg Arg Ile Asp Ile Ile Leu Ile Ile Asn Gln Thr Thr Ile Met
1      5      10
Lys Arg Val Leu Phe Ser Met Val Leu Leu Met Ala Val Ser Phe Ala
      20      25      30
Phe Ala Gln Glu Lys Asn Val Lys Glu Ala Lys Ser Ile Ala Gly Glu
      35      40      45
Val Lys Pro Asp Phe Ala Lys Ala Glu Gln Leu Ile Asn Glu Ala Leu
      50      55      60
Thr Asn Pro Glu Thr Lys Asp Asn Ala Ala Thr Trp Asp Val Ala Gly
      65      70      75      80
Tyr Ile Gln Lys Arg Ile Asn Glu Lys Glu Met Glu Asn Ala Tyr Leu
      85      90      95
Arg Lys Pro Tyr Asp Thr Leu Lys Val Tyr Asn Ser Val Leu Asn Met
      100      105      110
Tyr Asn Tyr Tyr Val Lys Cys Asp Glu Leu Ala Gln Ile Pro Asn Glu
      115      120      125
Lys Gly Lys Ile Lys Asn Lys Tyr Arg Ser Ala Asn Ser Lys Thr Ile
      130      135      140
Leu Ala Glu Arg Pro Asn Leu Ile Asn Gly Gly Ile Gln Tyr Phe Asn
      145      150      155      160
Leu Asn Lys Asn Glu Asp Ala Leu Lys Tyr Phe Ala Ala Tyr Val Asp
      165      170      175
Ala Ala Thr Leu Pro Met Met Glu Lys Glu Asn Leu Leu Glu Lys Asp

```

Thr	Ile	Leu	180	Gln	Val	Ala	Tyr	185	Tyr	Ala	Thr	Leu	190	Ala	Asp	Arg
		195					200						205			
Val	Gly	Asp	Lys	Asp	Ala	Val	Met	Lys	Tyr	Ala	Gln	Tyr	Ala	Leu	Lys	
	210					215					220					
Asp	Lys	Glu	Asn	Gly	Gln	Phe	Ala	Met	Gln	Leu	Leu	Thr	Asp	Ala	Tyr	
225					230					235					240	
Lys	Ala	Lys	Gly	Asp	Thr	Ala	Lys	Trp	Val	Glu	Lys	Leu	Gln	Glu	Gly	
			245						250					255		
Ile	Val	Lys	Phe	Pro	Glu	Asn	Gln	Tyr	Phe	Phe	Ala	Asn	Leu	Val	Asp	
			260					265					270			
Tyr	Tyr	Ser	Ser	Ser	Asn	Gln	Asn	Asp	Lys	Ala	Met	Gln	Phe	Ala	Asp	
	275						280					285				
Asp	Met	Leu	Ala	Lys	Asp	Pro	Asn	Asn	Lys	Leu	Tyr	Leu	Tyr	Val	Lys	
	290					295					300					
Ala	Tyr	Leu	Tyr	His	Asn	Met	Lys	Asp	Tyr	Glu	Lys	Ala	Ile	Glu	Phe	
305					310					315					320	
Tyr	Lys	Lys	Thr	Leu	Asp	Ile	Asp	Pro	Ala	Tyr	Ala	Glu	Ala	Cys	Ser	
			325						330					335		
Asn	Leu	Gly	Leu	Val	Tyr	Leu	Leu	Gln	Ala	Gln	Glu	Tyr	Ala	Asp	Lys	
		340						345					350			
Ala	Pro	Ala	Asp	Ile	Asn	Asp	Pro	Asn	Tyr	Ala	Thr	Ala	Gln	Ala	Glu	
		355						360				365				
Ile	Lys	Lys	Phe	Tyr	Glu	Ala	Ala	Lys	Pro	Tyr	Tyr	Glu	Lys	Ala	Arg	
	370					375					380					
Glu	Leu	Lys	Pro	Asp	Gln	Lys	Asp	Leu	Trp	Leu	Gln	Gly	Leu	Tyr	Arg	
385					390					395					400	
Val	Tyr	Tyr	Asn	Leu	Asn	Met	Gly	Pro	Glu	Phe	Glu	Glu	Ile	Glu	Lys	
			405					410					415			
Met	Met															

<210> 5886

<211> 100

<212> PRT

<213> B.fragilis

<400> 5886

Asn	Cys	Arg	Ile	Leu	Asn	Asn	Lys	Glu	Phe	Thr	Ser	Glu	Leu	Ser	Arg	
1				5					10					15		
Arg	Leu	Gly	Tyr	Asn	Thr	Lys	Tyr	Thr	Ser	Glu	Leu	Ile	Thr	Ser	Leu	
		20						25					30			
Leu	Ser	Asp	Ile	Thr	Gln	Glu	Leu	Gln	Glu	Ser	Asn	Ala	Ile	Gly	Ile	
		35					40					45				
Gln	Gly	Phe	Gly	Thr	Phe	Glu	Val	Lys	Lys	Lys	Ala	Glu	Arg	Ile	Val	
	50					55					60					
Ile	Asn	Pro	Val	Thr	Lys	Leu	Arg	Leu	Leu	Val	Pro	Pro	Lys	Leu	Val	
65					70					75					80	
Leu	Ala	Phe	Lys	Pro	Ser	Pro	Ile	Leu	Lys	Asp	Lys	Phe	Lys	Glu	Thr	
				85					90					95		
Phe	Pro	Tyr	Glu													
			100													

<210> 5887

<211> 146

<212> PRT

<213> B.fragilis

<400> 5887

Leu Pro Met Val Lys Ile Met Lys Gly Gly Ala Val Glu Ala Gly Lys
 1 5 10 15
 Lys Ala Ala Lys Lys Gly Ile Gln Val Asn Val Leu Gly Val Gly Leu
 20 25 30
 Pro Asp Gly Ala Pro Ile Pro Ile Glu Gly Ser Asn Asp Phe Arg Arg
 35 40 45
 Asp Arg Glu Gly Asn Val Ile Val Thr Arg Leu Asn Glu Ala Met Cys
 50 55 60
 Gln Glu Ile Ala Lys Glu Gly Asn Gly Ile Tyr Val Arg Val Asp Asn
 65 70 75 80
 Ser Asn Ser Ala Gln Lys Ala Ile Asn Gln Glu Ile Asn Lys Met Ala
 85 90 95
 Lys Ser Asp Val Glu Ser Lys Val Tyr Thr Asp Tyr Asn Glu Gln Phe
 100 105 110
 Gln Val Ile Ala Trp Met Ile Leu Leu Leu Leu Val Glu Met Leu
 115 120 125
 Ile Leu Asp Arg Lys Asn Pro Leu Phe Lys Asn Ile Arg Leu Phe Ser
 130 135 140
 Asn Lys
 145

<210> 5888

<211> 71

<212> PRT

<213> B.fragilis

<400> 5888

Ser Phe Leu Ser Ser Lys Gln Asp Ala Lys Ile Leu Lys Met Gly Glu
 1 5 10 15
 Leu Cys Ser Phe Phe Ile Tyr Asn Phe Lys Arg Gly His Thr Lys Val
 20 25 30
 Ile Tyr Lys Ser Ala Gly Leu Trp Ile Asp Asn Arg Pro Val Tyr Gly
 35 40 45
 Phe Ser Lys Asp Lys Arg Ser Pro Phe Pro Ala Leu Leu Phe Gln Arg
 50 55 60
 Glu Pro Tyr Ile Leu Glu Asn
 65 70

<210> 5889

<211> 516

<212> PRT

<213> B.fragilis

<400> 5889

Thr Asn Leu Pro Pro Arg Leu Leu Gln Gly Leu Ile Asn Leu Asn Arg
 1 5 10 15
 Asn Arg Arg Met Glu Lys Lys Lys Ile Pro Val Ala Leu Met Ile Ala
 20 25 30
 Ala Gly Met Leu Leu Tyr Asn Asn Thr Val Ala Ala Gln Ser Leu Pro
 35 40 45
 Pro Thr Gln Glu Thr Ser Gln His Gln Leu Ser Phe Asn Glu Ala Leu
 50 55 60
 Gln Leu Leu His Lys Gly Asn Gln Ser Leu Lys Ile Ala Asp Lys Gly
 65 70 75 80
 Ile Asp Ile Ala Arg Ala Glu Arg Gly Lys Leu Asn Ala Phe Trp Met
 85 90 95
 Pro Ser Leu Gln Ser Thr Gly Ala Phe Val His Leu Ser Glu Lys Ile
 100 105 110
 Glu Val Lys Gln Pro Leu Ser Gln Phe Thr Asp Pro Ala Lys Asp Phe


```

1           5           10           15
Tyr Arg Leu Phe Glu Val Lys Thr Gln Thr Leu Pro Leu Pro Lys Pro
                20                25                30
Gly Phe Leu Gly Lys Glu Ala Glu Ser Ser Gly Thr Phe Ser Pro Ile
                35                40                45
Trp Val Arg Lys Gln Lys Gly Ile Val Ser Arg Lys Cys His Tyr Leu
                50                55                60
Ser Phe
65

```

<210> 5891
 <211> 144
 <212> PRT
 <213> B.fragilis

```

<400> 5891
Phe Leu Tyr Thr Leu Pro Asp Phe Val Cys Trp Leu Pro Gly Ala Trp
1           5           10           15
Gly Ser Gly Ile His Leu Cys His Phe Leu Ser Ser Gly Thr Pro Leu
                20                25                30
Glu Arg Leu Gln Ser Val Phe Gly His Ile Asn Gly Met Pro Ala Leu
                35                40                45
Ser Ser Ala Ser Glu Ala Lys Lys Met Cys Met Phe Leu Arg Trp Met
                50                55                60
Ile Arg Arg Asp Ser Pro Val Asp Leu Gly Ile Trp Arg Ser Phe Ser
65                70                75                80
Pro Ser Asp Leu Ile Ile Pro Leu Asp Thr His Val His Arg Ile Ser
                85                90                95
Thr Asp Leu Gly Leu Thr Asn Ala Arg Lys Cys Leu Lys Thr Ala Arg
                100                105                110
Cys Ile Thr Asp Ala Leu Arg Glu Ile Trp Pro Asp Asp Pro Val Lys
                115                120                125
Gly Asp Phe Ala Leu Phe Gly Phe Gly Ile Asn Glu Pro Val Lys Ser
                130                135                140

```

<210> 5892
 <211> 268
 <212> PRT
 <213> B.fragilis

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<400> 5892
Gln Gly Gly Ala Gly Met Ala Asn Trp Ile Thr Leu Lys Gln Leu Ser
1           5           10           15
Glu Lys Arg Gly Ile Ala Glu Ser Asp Leu Arg Thr Trp Ala Asn Leu
                20                25                30
Gly Tyr Ile Thr Ser Ser Arg Ile Glu Asn Val Leu Met Ile Asp Asp
                35                40                45
Glu Ser Leu Thr Gln Tyr Leu Asp Val His Gln Thr Lys Asp Leu Gly
                50                55                60
Glu Asn Tyr Leu Glu Lys Ile Ile Lys Glu Lys Glu Leu Glu Arg Glu
65                70                75                80
Val Leu Leu Ser Gln Cys Asp Asp Glu Leu Phe Leu Leu Lys Thr Gln
                85                90                95
Lys Leu His Gln Pro Leu Phe His Ile Leu Ile Gln Glu Leu Gly Gln
                100                105                110
Leu Ile Thr Asp Asp His Glu Arg Glu Ile Phe Leu Ser Val Ser Ser
                115                120                125
Gly Glu Pro Ile Ala Arg Val Ala Lys Arg Asn Lys Met Thr Tyr Ala
                130                135                140

```

```

Arg Val Ala Thr Cys Tyr Ser Ser Ile Leu Arg Thr Leu Gly Glu His
145          150          155          160
Lys Gly Arg Ile Ala Thr Phe Arg Ser Arg Thr Met Glu Leu Met Phe
          165          170          175
Asp Lys Cys Asn Ala Val Thr Pro Val Asn Thr Pro Leu Ser Asn Leu
          180          185          190
Val Gly Ala His Ala Tyr Asn Val Leu Tyr Gly Glu Met Gly Phe Arg
          195          200          205
Thr Val Arg Asp Leu Leu Gln Tyr Ala Thr Gln Asn Gly Trp Gln Ser
          210          215          220
Leu Arg Arg Phe Lys Gly Met Gly Leu Val Thr Tyr Lys Ser Val Met
225          230          235          240
Asn Ala Leu Arg Asp Ala Asn Phe Ile Ile Val Arg Lys Asp Gly Asn
          245          250          255
Ile Glu Leu Ser Pro Glu Ile Ala Ala Leu Val Ile
          260          265

```

<210> 5893

<211> 413

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (379)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 5893

```

Glu Lys Arg Tyr Ser Gln Trp Asp Ser Val Leu Leu Cys Gly Lys Ser
1          5          10          15
Lys Leu Lys Asp Asn Leu Ile Met Gln His Ser Pro Ile Thr Arg Val
          20          25          30
Ile Gln Cys Glu Trp Gln Arg Met Thr Ser Arg Arg Leu Tyr Phe Gly
          35          40          45
Val Cys Leu Val Leu Pro Leu Phe Thr Leu Phe Phe Met Ala Thr Ile
          50          55          60
Phe Gly Asn Gly Gln Met Glu Asn Ile Pro Ile Gly Ile Val Asp Arg
65          70          75          80
Asp Asn Thr Ala Thr Ser Arg Asp Ile Thr Arg Arg Met Ser Ala Val
          85          90          95
Pro Thr Phe Arg Val Thr Arg His Phe Val Asp Glu Ala Glu Ala Arg
          100          105          110
Lys Ala Val Gln Gln Lys Glu Ile Tyr Gly Tyr Leu Ser Ile Pro Pro
          115          120          125
Arg Phe Glu Gln Asp Met Ile Ser Gly Gln Asp Ala Thr Leu Asn Tyr
          130          135          140
Tyr Tyr His Tyr Ala Leu Leu Ser Val Gly Gly Glu Leu Met Ala Ala
145          150          155          160
Phe Glu Ser Ser Leu Ala Pro Val Ala Leu Ser Pro Ile Val Met Lys
          165          170          175
Ala Val Ala Leu Gly Val Asn Glu Gln Gln Ile Glu Thr Phe Leu Leu
          180          185          190
Pro Val Gln Ala Asn Asn His Pro Ile Tyr Asn Pro Ser Leu Asp Tyr
          195          200          205
Ser Val Tyr Leu Ser Gln Pro Phe Phe Phe Val Leu Phe Gln Val Leu
          210          215          220
Val Leu Leu Ile Thr Val Tyr Ala Val Gly Ser Glu Ile Lys Phe Gly
225          230          235          240
Thr Ala Gly Gln Trp Leu Gln Ala Ala Gly Gly Asp Ile Thr Val Ala

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245

250

<210> 5895
 <211> 500
 <212> PRT
 <213> B.fragilis

<400> 5895

Arg	Asp	Glu	His	Asp	Met	Asn	Lys	Asn	Leu	His	Pro	Leu	Met	Leu	Ala
1				5					10					15	
Gly	Thr	Gly	Ser	Asp	Val	Gly	Lys	Ser	Ile	Ile	Ala	Ala	Ala	Phe	Cys
			20					25					30		
Arg	Ile	Phe	Leu	Gln	Asp	Gly	Tyr	His	Pro	Ala	Pro	Phe	Lys	Ala	Gln
		35					40					45			
Asn	Met	Ala	Leu	Asn	Ser	Tyr	Ala	Thr	Pro	Glu	Gly	Leu	Glu	Ile	Gly
	50					55					60				
Arg	Ala	Gln	Ala	Val	Gln	Ala	Glu	Ala	Ala	Gly	Val	Pro	Cys	His	Thr
65					70					75					80
Asp	Met	Asn	Pro	Leu	Leu	Leu	Lys	Pro	Ser	Ser	Asp	His	Thr	Ser	Gln
				85					90					95	
Val	Val	Leu	Asn	Gly	Arg	Pro	Ile	Gly	Asn	Arg	Asn	Ala	Tyr	Glu	Tyr
			100					105					110		
Phe	Arg	Arg	Glu	Gly	Arg	Glu	Glu	Leu	Arg	Lys	Glu	Val	His	Ala	Ala
		115					120					125			
Phe	Asp	Arg	Leu	Ala	Ala	Arg	Tyr	Asn	Pro	Val	Val	Met	Glu	Gly	Ala
	130					135					140				
Gly	Ser	Ile	Ser	Glu	Ile	Asn	Leu	Arg	Asp	Ser	Asp	Leu	Val	Asn	Leu
145					150					155					160
Pro	Met	Ala	Met	His	Ala	Gly	Ala	Asp	Val	Ile	Leu	Val	Ala	Asp	Ile
				165					170					175	
Asp	Arg	Gly	Gly	Val	Phe	Ala	Ser	Val	Tyr	Gly	Ser	Val	Met	Leu	Leu
			180					185					190		
Arg	Pro	Glu	Glu	Arg	Lys	His	Ile	Lys	Gly	Ile	Leu	Ile	Asn	Lys	Phe
		195					200						205		
Arg	Gly	Asp	Ile	Arg	Leu	Phe	Glu	Ser	Gly	Val	Lys	Met	Leu	Glu	Asp
	210					215					220				
Leu	Cys	Gly	Val	Pro	Val	Val	Gly	Val	Val	Pro	Tyr	Tyr	Lys	Asp	Ile
225					230					235					240
Tyr	Ile	Glu	Glu	Glu	Asp	Ser	Val	Met	Leu	Gln	Thr	Lys	Asn	Ile	Arg
				245					250					255	
Ala	Gly	Gln	Gly	Lys	Val	Asn	Val	Ala	Val	Val	Leu	Leu	Arg	His	Leu
			260					265						270	
Ser	Asn	Phe	Thr	Asp	Phe	Asn	Val	Leu	Glu	Arg	Asp	Pro	Arg	Val	His
		275					280					285			
Leu	Phe	Tyr	Thr	Asn	Asn	Thr	Asp	Glu	Leu	Met	Lys	Ala	Asp	Ile	Ile
	290					295					300				
Leu	Leu	Pro	Gly	Ser	Lys	Ser	Thr	Leu	Ser	Asp	Leu	Tyr	Glu	Leu	Arg
305					310					315					320
Arg	Asn	Gly	Val	Ala	Gln	Ala	Ile	Val	Arg	Ala	His	Arg	Glu	Gly	Ala
				325					330					335	
Thr	Val	Met	Gly	Ile	Cys	Gly	Gly	Tyr	Gln	Leu	Met	Gly	Arg	Glu	Val
		340						345					350		
Cys	Asp	Pro	Asp	His	Val	Glu	Gly	Glu	Ile	Glu	Arg	Leu	Pro	Gly	Leu
	355						360					365			
Gly	Leu	Pro	Val	Ser	Thr	Arg	Met	Gln	Gly	Glu	Lys	Val	Thr	Arg	
	370				375					380					
Gln	Val	Arg	Phe	Cys	Phe	Leu	Glu	Asp	Ser	Ala	Val	Cys	Glu	Gly	Tyr
385					390					395					400
Glu	Ile	His	Met	Gly	Thr	Thr	Thr	Pro	Leu	Ala	Asp	Val	Pro	Val	Ser

405 410 415
 Pro Leu Asn His Leu Ala Asp Gly Arg Glu Asp Gly Tyr Phe Val Asp
 420 425 430
 Arg Thr Cys Met Gly Thr Tyr Val His Gly Ile Leu Asp Asn Pro Ser
 435 440 445
 Val Ile Asp Tyr Leu Leu Glu Pro Phe Ala Asp Lys Leu Lys Glu Thr
 450 455 460
 Ala Phe Asp Tyr Lys Ala Phe Lys Glu Glu Gln Tyr Asp Lys Leu Ala
 465 470 475 480
 Ala His Val Arg Lys His Val Asp Leu Pro Leu Ile Tyr Gln Ile Leu
 485 490 495
 Thr Asp Asn Asp
 500

<210> 5896

<211> 400

<212> PRT

<213> B.fragilis

<400> 5896

Ser Val Val Asn Met Lys Thr Ser Gly Lys Leu Ser Gln Ile Ser Phe
 1 5 10 15
 Ile Ile Ala Arg Glu Phe Arg Ala Ile Ser Thr Ser Tyr Ala Val Leu
 20 25 30
 Leu Val Leu Met Gly Gly Ile Phe Val Tyr Gly Leu Leu Tyr Asn Tyr
 35 40 45
 Met Tyr Ala Pro Asn Ile Val Thr Asp Ala Pro Val Ala Val Val Asp
 50 55 60
 Asn Ser His Ser Ser Leu Ser Arg Gln Tyr Ile Arg Trp Leu Asp Ala
 65 70 75 80
 Thr Pro Gln Val Ala Val Tyr Ala Gln Ala Met Asp Tyr Arg Glu Ala
 85 90 95
 Arg Glu Trp Met Lys Glu Gly Lys Val Gln Gly Ile Leu Tyr Ile Pro
 100 105 110
 His Asp Phe Glu Thr Arg Val Phe Gln Gly Arg Glu Ala Val Phe Ser
 115 120 125
 Leu Tyr Ala Thr Thr Asp Ala Phe Leu Tyr Phe Glu Ala Leu Gln Glu
 130 135 140
 Ala Thr Ser Arg Val Tyr Leu Ala Ile Asn Asp Ala His Arg Met Asp
 145 150 155 160
 Gly Ala Val Phe Leu Pro Pro Gln Gly Leu Leu Ala Val Ala Met Ala
 165 170 175
 Lys Pro Val Asn Val Thr Gly Thr Ala Leu Tyr Asn His Thr Glu Gly
 180 185 190
 Tyr Gly Ser Tyr Leu Ile Pro Ala Val Met Met Val Ile Ile Phe Gln
 195 200 205
 Thr Leu Leu Met Val Ile Gly Met Leu Thr Gly Asp Glu Tyr Gln His
 210 215 220
 Arg Ala Thr Glu Pro Leu Leu Pro Gly Gly Arg Thr Val Asp Lys Ser
 225 230 235 240
 Gly Leu Trp Gly Gly Ala Met Arg Leu Val Ala Gly Lys Thr Phe Val
 245 250 255
 Tyr Cys Gly Leu Tyr Thr Val Phe Ser Met Phe Leu Leu Gly Leu Leu
 260 265 270
 Pro His Phe Ser Ile Pro Asn Ile Gly Asn Gly Leu Tyr Ile Thr
 275 280 285
 Ala Met Met Val Pro Tyr Leu Met Ala Thr Ser Phe Phe Gly Leu Ala
 290 295 300
 Ala Ser Arg Tyr Phe Thr Asp Ser Glu Ala Pro Leu Leu Met Ile Ala

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305          310          315          320
Phe Phe Ser Val Gly Leu Ile Phe Leu Ser Gly Val Ser Tyr Pro Leu
          325          330          335
Glu Leu Met Pro Trp Tyr Trp Arg Met Ala His Tyr Ile Leu Pro Ala
          340          345          350
Ala Pro Ala Thr Leu Ala Phe Val Lys Leu Asn Ser Met Gly Ala Asp
          355          360          365
Met Ala Asp Ile Gln Pro Glu Tyr Ile Thr Leu Trp Ile Gln Val Ile
          370          375          380
Val Tyr Phe Gly Leu Ser Val Trp Val Tyr Lys Lys Lys Leu Glu Ala
385          390          395          400

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<210> 5897

<211> 321

<212> PRT

<213> B.fragilis

<400> 5897

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Pro Ser Pro Lys Ala Leu Trp Glu His Leu Lys Asn Trp Pro Cys Arg
1          5          10          15
Ser Gly Leu Ser Gln Gln Thr Leu Thr Pro Glu Leu Arg His Pro Gln
          20          25          30
Asn Ile Ile Phe Ala Ala Asp His Gly Ile Val Asp Glu Gly Val Ser
          35          40          45
Leu Ser Pro Lys Glu Ile Thr Trp Gln Gln Ile Ser Asn Phe Leu His
          50          55          60
Gly Gly Ala Gly Val Asn Phe Leu Cys Arg Gln His Gly Phe Glu Leu
65          70          75          80
Lys Ile Val Asp Ala Gly Val Asp Tyr Asp Leu Pro Tyr Glu Lys Gly
          85          90          95
Ile Ile Asn Met Lys Val Arg Lys Ser Ser Arg Asn Tyr Leu Tyr Glu
          100          105          110
Ala Ala Met Thr Glu Glu Glu Met Asn Leu Cys Ile Glu Arg Gly Ala
          115          120          125
Glu Val Val Arg Gln Cys His Ala Glu Gly Cys Asn Val Leu Ser Leu
          130          135          140
Gly Glu Met Gly Ile Gly Asn Thr Ser Ser Ser Ser Met Trp Met Thr
145          150          155          160
Cys Phe Thr His Ile Pro Leu Glu Leu Cys Val Gly Ala Gly Ser Gly
          165          170          175
Leu Asp Asn Ala Gly Val Arg His Lys Tyr Asn Val Leu Gln Gln Ala
          180          185          190
Leu Asp His Tyr Gln Gly Asp Gly Ser Ala His Asp Leu Ile Arg Tyr
          195          200          205
Phe Gly Gly Leu Glu Met Val Met Ala Ile Gly Ala Met Leu Gln Ala
          210          215          220
Ala Glu Leu Lys Met Ile Ile Leu Val Asp Gly Phe Ile Met Thr Asn
225          230          235          240
Cys Ile Leu Ala Ala Ser Gln Leu Tyr Pro Glu Val Leu His Tyr Ala
          245          250          255
Ile Phe Gly His Gln Gly Asp Glu Ser Gly His Lys Leu Val Leu Asp
          260          265          270
Ala Met Gly Ala Lys Pro Leu Leu Asn Leu Gly Leu Arg Leu Gly Glu
          275          280          285
Gly Thr Gly Ala Ile Cys Ser Tyr Pro Ile Ile Asp Ser Ala Ile Arg
          290          295          300
Met Ile Asn Glu Met Asp Asn Phe Ala His Ala Ala Ile Thr Lys Tyr
305          310          315          320
Phe

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<210> 5898
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 5898

```

Ser His Ala Lys Ile Asn Ile Val Ser Glu Ile Pro Ile Ala Met Ala
1          5          10          15
Gln Tyr Phe Ala Ser Gly Asn Gly Asn Ile Lys Tyr Tyr Arg Thr Phe
          20          25          30
Ala Asn Gln Lys Tyr Thr Asp Arg Phe Met Lys Gln Ile Ile Leu Ile
          35          40          45
Thr Gly Gly Ala Arg Ser Gly Lys Ser Ser Tyr Ala Glu Arg Leu Ala
          50          55          60
Leu Ser Leu Ser Pro Asn Pro Val Tyr Leu Ala Thr Ser Arg Ile Trp
65          70          75          80
Asp Glu Glu Phe Arg Gln Arg Val Leu Arg His Gln Ala Asn Arg Gly
          85          90          95
Pro Glu Trp Thr Asn Ile Glu Glu Glu Lys Glu Leu Ser Arg His Ser
100          105          110
Leu Glu Gly Arg Val Val Leu Ile Asp Cys Val Thr Leu Trp Cys Thr
115          120          125
Asn Tyr Phe Phe Asp Leu Glu Ala Asp Thr Asp Lys Ala Leu Thr Ala
130          135          140
Val Lys Ala Glu Phe Asp Arg Leu Thr Gln Gln Asp Ala Thr Leu Ile
145          150          155          160
Phe Val Thr Asn Glu Ile Gly Met Gly Gly Thr Ser Glu Asn Leu Ile
          165          170          175
Gln Arg Lys Phe Thr Asp Met Gln Gly Trp Met Thr Gln Tyr Ile Ala
          180          185          190
Ser Arg Ala Asn Arg Val Ile Leu Met Glu Arg Gly Phe Leu
          195          200          205

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<210> 5899
 <211> 502
 <212> PRT
 <213> B.fragilis

<400> 5899

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Lys Lys Lys Asn Ile Met Ala Lys Glu Leu Lys Asp Leu Thr Lys Arg
1          5          10          15
Ser Glu Asn Tyr Ser Gln Trp Tyr Asn Asp Leu Val Val Lys Ala Asp
          20          25          30
Leu Ala Glu Gln Ser Ala Val Arg Gly Cys Met Val Ile Lys Pro Tyr
          35          40          45
Gly Tyr Ala Ile Trp Glu Lys Met Gln Arg Gln Leu Asp Asp Met Phe
          50          55          60
Lys Glu Thr Gly His Val Asn Ala Tyr Phe Pro Leu Leu Ile Pro Lys
65          70          75          80
Ser Phe Leu Ser Arg Glu Ala Glu His Val Glu Gly Phe Ala Lys Glu
          85          90          95
Cys Ala Val Val Thr His Tyr Arg Leu Lys Asn Ala Glu Asp Gly Ser
100          105          110
Gly Val Val Val Asp Pro Ala Ala Lys Leu Glu Glu Glu Leu Ile Ile
115          120          125
Arg Pro Thr Ser Glu Thr Ile Ile Trp Asn Thr Tyr Lys Asn Trp Ile
130          135          140

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Gln Ser Tyr Arg Asp Leu Pro Ile Leu Cys Asn Gln Trp Ala Asn Val
 145 150 155 160
 Phe Arg Trp Glu Met Arg Thr Arg Leu Phe Leu Arg Thr Ala Glu Phe
 165 170 175
 Leu Trp Gln Glu Gly His Thr Ala His Ala Thr Arg Glu Glu Ala Glu
 180 185 190
 Glu Glu Ala Ile Arg Met Leu Asn Val Tyr Ala Glu Phe Ala Glu Lys
 195 200 205
 Tyr Met Ala Val Pro Val Val Lys Gly Val Lys Ser Ala Asn Glu Arg
 210 215 220
 Phe Ala Gly Ala Leu Asp Thr Tyr Thr Ile Glu Ala Met Met Gln Asp
 225 230 235 240
 Gly Lys Ala Leu Gln Ser Gly Thr Ser His Phe Leu Gly Gln Asn Phe
 245 250 255
 Ala Lys Ala Phe Asp Val Gln Phe Val Asn Lys Glu Asn Lys Leu Glu
 260 265 270
 Tyr Val Trp Ala Thr Ser Trp Gly Val Ser Thr Arg Leu Met Gly Ala
 275 280 285
 Leu Ile Met Thr His Ser Asp Asp Asn Gly Leu Val Leu Pro Pro His
 290 295 300
 Leu Ala Pro Ile Gln Val Val Ile Val Pro Ile Tyr Lys Asn Asp Glu
 305 310 315 320
 Gln Leu Lys Leu Ile Asp Ala Lys Val Glu Gly Ile Val Ala Arg Leu
 325 330 335
 Lys Gln Leu Gly Ile Ser Val Lys Tyr Asp Asn Ala Asp Asn Lys Arg
 340 345 350
 Pro Gly Phe Lys Phe Ala Asp Tyr Glu Leu Lys Gly Val Pro Val Arg
 355 360 365
 Leu Val Met Gly Gly Arg Asp Leu Glu Asn Asn Thr Met Glu Val Met
 370 375 380
 Arg Arg Asp Thr Leu Glu Lys Glu Thr Val Thr Cys Asp Gly Ile Glu
 385 390 395 400
 Thr Tyr Val Gln Asn Leu Leu Glu Glu Ile Gln Ala Asn Ile Tyr Lys
 405 410 415
 Lys Ala Arg Thr Tyr Arg Asp Ser Arg Ile Thr Thr Val Asp Ser Tyr
 420 425 430
 Asp Glu Phe Lys Glu Lys Ile Glu Glu Gly Gly Phe Ile Leu Ala His
 435 440 445
 Trp Asp Gly Thr Val Glu Thr Glu Glu Lys Ile Lys Glu Glu Thr Lys
 450 455 460
 Ala Thr Ile Arg Cys Ile Pro Phe Glu Ser Phe Val Glu Gly Asp Lys
 465 470 475 480
 Glu Pro Gly Lys Cys Met Val Thr Gly Lys Pro Ser Ala Cys Arg Val
 485 490 495
 Ile Phe Ala Arg Ser Tyr
 500

<210> 5900

<211> 168

<212> PRT

<213> B.fragilis

<400> 5900

Val Tyr Met Lys Gln Glu Leu Lys Glu Lys Leu Leu Leu Leu Ala Asp
 1 5 10 15
 Lys Tyr Glu Val Lys Glu Phe Ile Met Asp Asp Pro Ile Gln Phe Pro
 20 25 30
 His Arg Tyr Thr Asp Lys Ala Asp Ile Glu Ile Ser Gly Leu Ile Ala
 35 40 45

Phe Trp Ile Ala Thr Gly Asn Arg Lys Ala Ile Ile Lys Ser Gly Asp
 50 55 60
 Arg Ile Asp His Glu Leu Phe Leu Asn Ala Pro Tyr Arg Tyr Ile Leu
 65 70 75 80
 Ser Glu Glu Trp Arg Lys Tyr Arg Gly Ser Asn Ile Gln Phe Phe Ile
 85 90 95
 Ala Ile Thr Pro Gly Met Ile Ser Ile Tyr Ser Ala Arg Leu Cys Met
 100 105 110
 Leu Ala Thr Gly Ser Met Gly Ile Trp Asn Pro Phe Val Pro Phe Ser
 115 120 125
 Leu Phe Arg Tyr Ala Ile Gly Lys Ile Ala Ile Gly Val Arg Thr Tyr
 130 135 140
 Gln Trp Asp Ala Cys Phe Val Lys Cys Phe Arg Ser Lys Glu Asn Val
 145 150 155 160
 Tyr Val Ser Ala Leu Asp Asp Ser
 165

<210> 5901

<211> 114

<212> PRT

<213> B.fragilis

<400> 5901

Ser Val Val Lys Phe Ile Ile Thr Tyr Ser Phe Val Lys Leu Val Pro
 1 5 10 15
 Tyr Lys Met Phe Ser Gly Ser Lys Arg Gln Val Met Ala Phe Ser Ala
 20 25 30
 Asn Tyr Pro Phe Leu Phe Ser Tyr Pro Tyr Arg Gly Glu Cys Pro Gly
 35 40 45
 Thr Phe Cys Phe Phe Ala Gln Lys Thr Gly Leu Gly Lys Gly Lys Ser
 50 55 60
 Leu Cys Phe His Phe Glu Glu Pro Ile Phe Arg Pro Lys Glu Val Ser
 65 70 75 80
 Ile Tyr Ser Glu Arg Arg Leu Cys Phe Ser Lys Met Asn Lys Ser Phe
 85 90 95
 Ala Gln Tyr Leu Tyr Met Phe Ser Ser Ile Thr Tyr Ile Val Leu Ile
 100 105 110
 Trp Glu

<210> 5902

<211> 333

<212> PRT

<213> B.fragilis

<400> 5902

Glu Met Glu Asn Ser Glu Ser Lys Lys Gly Arg Thr Leu Ser Ile Ala
 1 5 10 15
 Phe Ile Val Val Leu Val Ala Val Ala Leu Phe Thr Val Ile Gly Met
 20 25 30
 Ile Ala Met Arg His Gln Pro Leu Val Leu Gln Gly Gln Ala Glu Ala
 35 40 45
 Thr Glu Ile Arg Ile Ser Gly Lys Leu Pro Gly Arg Ile Asp Thr Phe
 50 55 60
 Leu Val Glu Glu Gly Gln Trp Val Lys Gln Gly Asp Thr Leu Val Val
 65 70 75 80
 Ile Asn Ser Pro Thr Val Glu Ala Lys Tyr Arg Gln Val Asp Ala Leu
 85 90 95
 Lys Gln Val Ala Val Glu Gln Asn Lys Lys Ile Asp Ala Gly Thr Arg

	100		105		110										
Lys	Gln	Ile	Ile	Ala	Thr	Ala	Gln	Gln	Leu	Trp	Asn	Lys	Thr	Gln	Ser
	115						120					125			
Asp	Leu	Thr	Leu	Ala	Arg	Thr	Thr	Tyr	Asn	Arg	Ile	Leu	Thr	Leu	Tyr
	130					135					140				
Lys	Asp	Ser	Val	Val	Thr	Ser	Gln	Arg	Lys	Asp	Glu	Val	Glu	Ala	Met
145					150					155					160
Tyr	Lys	Ala	Ala	Gln	Ala	Ala	Glu	Arg	Ala	Ala	Tyr	Glu	Gln	Tyr	Gln
			165						170					175	
Met	Ala	Val	Asp	Gly	Ala	Gln	Ser	Glu	Asp	Lys	Ala	Ser	Ala	Arg	Ser
		180						185					190		
Met	Val	Asn	Ala	Ala	Asn	Ser	Thr	Val	Asp	Glu	Val	Ser	Ser	Leu	Leu
	195						200					205			
Val	Asp	Ala	Arg	Leu	Ile	Ala	Pro	Glu	Asp	Gly	Gln	Ile	Ala	Thr	Ile
	210					215					220				
Phe	Pro	Lys	Arg	Gly	Glu	Leu	Val	Ala	Pro	Gly	Thr	Pro	Ile	Met	Asn
225					230					235					240
Leu	Val	Val	Met	Asp	Asp	Ile	His	Val	Val	Leu	Asn	Val	Arg	Glu	Asp
			245						250					255	
Leu	Met	Pro	Asp	Phe	Arg	Met	Gly	Gly	Thr	Phe	Ile	Gly	Asp	Val	Pro
		260					265						270		
Ala	Leu	Ala	Gln	Lys	Gly	Ile	Gly	Phe	Lys	Ile	Tyr	Tyr	Ile	Ser	Pro
	275					280						285			
Leu	Gly	Ser	Phe	Ala	Thr	Trp	Lys	Ser	Thr	Lys	Gln	Thr	Gly	Ser	Tyr
	290					295					300				
Asp	Leu	Gln	Thr	Phe	Glu	Ile	His	Ala	Arg	Pro	Thr	Lys	Lys	Val	Glu
305					310				315						320
Gly	Leu	Arg	Pro	Gly	Met	Ser	Val	Leu	Val	Glu	Ile	Lys			
			325					330							

<210> 5903

<211> 136

<212> PRT

<213> B.fragilis

<400> 5903

Glu	Pro	Glu	Lys	Ala	Ser	Gln	Asp	Arg	Pro	Lys	Asn	Tyr	Leu	Gln	Asn
1			5						10					15	
Leu	Ser	Glu	Lys	Gly	Lys	Val	Met	Ile	Glu	Ile	His	Thr	Ile	Val	Thr
		20						25					30		
Phe	Asp	Lys	Glu	Met	Lys	Arg	Leu	Ser	Lys	Lys	Tyr	His	Ser	Ile	Ile
	35						40					45			
Lys	Asp	Tyr	Ala	Ala	Leu	Ile	Glu	Asp	Leu	Lys	Lys	Asn	Pro	His	Ile
	50					55					60				
Gly	Val	Asp	Leu	Gly	Asn	Gly	Ile	Arg	Lys	Val	Arg	Met	Ala	Ile	Ala
65					70				75					80	
Ser	Lys	Gly	Lys	Gly	Lys	Ser	Gly	Gly	Ala	Arg	Val	Ile	Thr	Asp	Thr
				85				90					95		
Ser	Ala	Ile	Ile	Ser	Val	Glu	Glu	Gly	Arg	Val	Thr	Leu	Leu	Thr	Ile
		100					105					110			
Tyr	Asp	Lys	Ser	Asp	Arg	Glu	Asn	Ile	Ser	Asp	Asn	Glu	Ile	Ile	Arg
	115					120					125				
Leu	Gln	Glu	Ile	Leu	Lys	Lys									
	130				135										

<210> 5904

<211> 165

<212> PRT

<213> B.fragilis

<400> 5904

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Lys Gln Phe Asp Met Ile Ala Leu Asp Ile Leu Ser Asp Gly Phe Phe
1      5      10      15
Ala Ala Ile Ala Gly Ile Gly Phe Gly Ala Ile Ser Asp Pro Pro Leu
      20      25      30
Arg Ala Phe Lys Met Ile Ala Ile Leu Ala Ala Ala Gly His Ala Cys
      35      40      45
Arg Tyr Cys Leu Met Thr Phe Leu Gly Val Asp Ile Ala Thr Ala Ser
      50      55      60
Leu Phe Gly Ala Leu Val Ile Gly Phe Gly Ser Leu Trp Leu Gly Arg
65      70      75      80
Lys Val Tyr Cys Pro Met Thr Val Leu Tyr Ile Pro Ala Leu Leu Pro
      85      90      95
Met Ile Pro Gly Lys Phe Ala Tyr Asn Met Val Phe Ser Leu Ile Met
      100     105     110
Ser Leu Gln Thr Met Asn Glu Pro Glu Arg Leu Gly Lys Tyr Met Glu
      115     120     125
Thr Phe Phe Ser Asn Gly Leu Val Thr Cys Thr Val Ile Phe Met Leu
      130     135     140
Ala Val Gly Ala Thr Phe Pro Met Phe Leu Leu Pro His Lys Ala Phe
145     150     155     160
Ser Leu Thr Arg His
      165

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<210> 5905

<211> 279

<212> PRT

<213> B.fragilis

<400> 5905

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Asn Asp Leu Cys Ala Phe Ser Phe Leu Ser Phe Leu Tyr Phe Cys Ala
1      5      10      15
Arg Phe Lys Lys Val Ser Asn Phe Met Thr Thr Asn Glu Ser Leu Ile
      20      25      30
Ser Ile Ser Lys Phe Ile Ala Gly Tyr Ser Ala His Leu Met Gly Ala
      35      40      45
Gly Val His Thr Ser Arg Val Ile Arg Asn Ser Lys Arg Ile Gly Glu
      50      55      60
Ala Tyr Gly Val Asp Val Lys Leu Ser Val Phe His Lys Asn Ile Ile
65      70      75      80
Leu Thr Ile Ile Asp Asn Glu Thr Arg Glu Ala Cys Asn Glu Val Ile
      85      90      95
Asp Ile Pro Pro His Pro Ile Ser Phe Glu His Asn Ser Glu Leu Ser
      100     105     110
Ala Leu Ser Trp Glu Val Tyr Asp Lys His Leu Ser Leu His Glu Leu
      115     120     125
Ser Asp Lys Phe Asn Lys Ile Ile Ser Ala Pro Lys Ile Asp Pro Leu
      130     135     140
Phe Val Leu Leu Leu Val Gly Phe Ala Asn Ala Ser Phe Cys Lys Leu
145     150     155     160
Phe Gly Gly Asp Ile Ile Ser Met Gly Ile Val Phe Ser Ala Thr Ile
      165     170     175
Thr Gly Leu Phe Leu Lys Gln Gln Met Gln Lys Lys Lys Ile Asn His
      180     185     190
Tyr Ile Ile Phe Ile Val Ser Ala Phe Val Ala Ser Leu Cys Ala Ser
      195     200     205
Thr Ala Leu Ile Phe Asp Thr Thr Ser Glu Ile Ala Leu Ala Thr Ser
      210     215     220

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Val Leu Tyr Leu Val Pro Gly Val Pro Leu Ile Asn Gly Val Ile Asp
 225 230 235 240
 Ile Val Glu Gly Tyr Ile Leu Thr Gly Phe Ala Arg Leu Thr Glu Ala
 245 250 255
 Ala Leu Leu Ile Val Ser Ile Ala Ile Gly Leu Ser Phe Thr Leu Leu
 260 265 270
 Met Val Lys Asn Ser Leu Ile
 275

<210> 5906

<211> 580

<212> PRT

<213> B.fragilis

<400> 5906

Ser Pro Leu Arg Gly Tyr Val Asn Lys Tyr Ser Ile Asn Ile Thr Phe
 1 5 10 15
 Tyr Thr Met Glu Leu Leu Arg Asn Leu Phe Glu Gly Tyr Pro Asn Leu
 20 25 30
 Trp Gly Gly Gly Val Ala His Ser Val Leu Ile Leu Ser Leu Val Ile
 35 40 45
 Ala Phe Gly Ile Met Leu Gly Lys Ile Lys Val Ala Gly Ile Ser Leu
 50 55 60
 Gly Val Thr Trp Ile Leu Phe Val Gly Ile Val Phe Gly His Phe Asn
 65 70 75 80
 Leu Asn Leu Asn Glu His Leu Leu His Phe Leu Lys Glu Phe Gly Leu
 85 90 95
 Ile Leu Phe Val Tyr Ser Ile Gly Leu Gln Val Gly Pro Gly Phe Phe
 100 105 110
 Ser Ala Phe Lys Lys Gly Gly Phe Thr Leu Asn Met Leu Ala Met Ile
 115 120 125
 Val Val Phe Ala Gly Val Ile Ile Thr Leu Ala Leu His Phe Ile Thr
 130 135 140
 Gly Ile Pro Ile Thr Thr Met Val Gly Ile Leu Ser Gly Ala Val Thr
 145 150 155 160
 Asn Thr Pro Gly Leu Gly Ala Ala Gln Gln Ala Asn Ser Asp Leu Thr
 165 170 175
 Gly Ile Asp Ala Pro Glu Ile Ala Leu Gly Tyr Ala Val Ala Tyr Pro
 180 185 190
 Leu Gly Val Val Gly Cys Ile Met Ser Leu Leu Gly Leu Lys Tyr Leu
 195 200 205
 Phe Arg Ile Asn Thr Lys Gln Glu Glu Ala Glu Ala Glu Gln Gly Leu
 210 215 220
 Gly His Leu Gln Glu Leu Thr Val Arg Pro Val Ser Leu Glu Val Arg
 225 230 235 240
 Asn Glu Ala Leu His Gly Lys Arg Ile Lys Asp Ile Arg Pro Leu Val
 245 250 255
 Asn Arg Asn Phe Val Val Ser Arg Ile Arg His Leu Asn Gly Lys Lys
 260 265 270
 Glu Ser Glu Leu Val Asn Ser Asp Thr Glu Leu His Leu Gly Asp Glu
 275 280 285
 Ile Leu Val Ile Ala Thr Pro Ile Asp Ile Glu Ala Ile Thr Ala Phe
 290 295 300
 Phe Gly Lys Pro Ile Glu Val Glu Trp Glu Gln Leu Asn Lys Glu Leu
 305 310 315 320
 Ile Ser Arg Arg Ile Leu Ile Thr Lys Pro Glu Leu Asn Gly Lys Thr
 325 330 335
 Leu Ala Gln Leu Lys Ile Arg Asn Asn Phe Gly Ala Ser Val Thr Arg
 340 345 350

Val Asn Arg Ser Gly Val Asp Leu Val Ala Ser Pro Gln Leu Gln Leu
 355 360 365
 Gln Met Gly Asp Arg Val Thr Ile Val Gly Ser Glu Leu Ala Val Ser
 370 375 380
 His Ala Glu Lys Val Leu Gly Asn Ser Met Lys Arg Leu Asn His Pro
 385 390 395 400
 Asn Leu Ile Pro Ile Phe Leu Gly Ile Ala Leu Gly Cys Ile Leu Gly
 405 410 415
 Ser Ile Pro Phe Met Phe Pro Gly Ile Pro Gln Pro Val Lys Leu Gly
 420 425 430
 Leu Ala Gly Gly Pro Leu Ile Val Ser Ile Leu Ile Ser Arg Phe Gly
 435 440 445
 Pro Gln Tyr Lys Leu Ile Thr Tyr Thr Thr Met Ser Ala Asn Leu Met
 450 455 460
 Ile Arg Glu Ile Gly Ile Ser Leu Phe Leu Ala Cys Val Gly Leu Gly
 465 470 475 480
 Ala Gly Asp Gly Phe Val Glu Thr Ile Ile His Glu Gly Gly Tyr Val
 485 490 495
 Trp Ile Ala Tyr Gly Met Ile Ile Thr Ile Val Pro Leu Leu Ala
 500 505 510
 Gly Phe Ile Gly Arg Tyr Ala Phe Lys Leu Asn Tyr Tyr Thr Leu Ile
 515 520 525
 Gly Val Leu Ala Gly Ser Thr Thr Asn Pro Pro Ala Leu Ala Tyr Ser
 530 535 540
 Asn Asp Leu Thr Ser Cys Asp Ala Pro Ala Val Gly Tyr Ala Thr Val
 545 550 555 560
 Tyr Pro Leu Thr Met Phe Leu Arg Val Leu Thr Ala Gln Leu Leu Ile
 565 570 575
 Leu Ser Leu Gly
 580

<210> 5907

<211> 191

<212> PRT

<213> B.fragilis

<400> 5907

Met Met Lys Arg Ile Tyr Thr Arg Thr Gly Asp Arg Gly Thr Thr Gly
 1 5 10 15
 Ile His Gly Gly Glu Arg Val Glu Lys Asp Asp Ile Arg Ile Glu Ala
 20 25 30
 Asn Gly Thr Ile Asp Glu Leu Asn Ala Val Ile Gly Ile Ile Arg Ser
 35 40 45
 Leu Leu Pro Gln Glu His Asp Trp Gln Lys Leu Leu His His Leu Gln
 50 55 60
 Arg Glu Leu Met Val Val Met Ser His Val Ala Thr Pro Ser Ala Ile
 65 70 75 80
 Arg Asp Lys Asn Pro Asn Val Leu Ser Pro Gly Leu Ala Ala Phe Cys
 85 90 95
 Glu Gln Glu Met Asp Thr Met Thr Ala Gly Leu Lys Glu Asn Gly Tyr
 100 105 110
 Phe Leu Leu Pro Gly Gly Thr Pro Val Ser Ala Gln Leu Gln Phe Ala
 115 120 125
 Arg Thr Val Ala Arg Arg Ala Glu Arg Arg Leu Trp Thr Leu Asn Arg
 130 135 140
 Gln Asp Ala Val Pro Glu Asp Ile Leu Ser Phe Ile Asn Arg Leu Ser
 145 150 155 160
 Asp Leu Phe Phe Val Met Ala Arg Phe Asp Met Gln Gln Gln Asp Trp
 165 170 175

Pro Glu Glu Arg Trp Gln Ala Phe Ala Tyr Lys Thr Lys Lys Lys
 180 185 190

<210> 5908

<211> 260

<212> PRT

<213> B.fragilis

<400> 5908

Gln Asn Val Arg Arg Arg Met Cys Phe Arg Ser Val Met Arg Tyr Thr
 1 5 10 15
 Ser Phe Ser Thr Pro Ala Thr Val Pro Ile Leu Asp Gly Tyr Arg Ile
 20 25 30
 Ser Ala Asp His Ala Val Ser Ala Leu His Thr Asp Glu Thr Glu Val
 35 40 45
 Ala Arg Leu Tyr Arg Arg Leu Leu Arg Ser Thr Val Ser Ser Lys Arg
 50 55 60
 Thr Val Phe Leu Pro Gly Asn Ser Tyr Thr Asn Val Tyr Ile Val Met
 65 70 75 80
 Glu Val Ile Leu Ile Arg His Thr Ser Val Asp Val Pro Lys Gly Val
 85 90 95
 Cys Tyr Gly Gln Thr Asp Val Pro Leu Arg Asp Ser Phe Glu Glu Glu
 100 105 110
 Ala Ser Ile Thr Ala Gln Gln Leu Gln Asn Asp Val Phe Asp Ala Val
 115 120 125
 Phe Thr Ser Pro Leu Ser Arg Cys Thr Arg Leu Ala Asp His Cys Gly
 130 135 140
 Tyr Pro Asp Ala Ile Arg Asp Ala Arg Leu Lys Glu Leu Asn Phe Gly
 145 150 155 160
 Glu Trp Glu Met Gln Glu Phe Asp Lys Ile Cys Asp Pro Arg Leu Glu
 165 170 175
 Glu Trp Tyr Asn Asp Tyr Phe His Val Ala Ala Thr Gly Gly Glu Ser
 180 185 190
 Phe Met Met Gln Leu Gln Arg Val Ser Glu Phe Leu Asn Glu Val Ser
 195 200 205
 Gly Lys Glu Tyr Lys Arg Ile Ala Val Phe Ala His Gly Gly Val Leu
 210 215 220
 Ile Cys Ala Gln Ile Tyr Ala Gly Ile Leu Arg Met Glu Asp Ala Phe
 225 230 235 240
 Asn Ala Leu Thr Pro Tyr Gly Gly Val Val Arg Leu Gln Leu Asn Ser
 245 250 255
 Lys Thr Glu Glu
 260

<210> 5909

<211> 325

<212> PRT

<213> B.fragilis

<400> 5909

Asp Arg Glu Ser Met Asp Gly Met Phe Phe Trp Tyr Ile Ser Leu Val
 1 5 10 15
 Tyr Phe Cys Arg Leu Phe Pro Leu Pro Leu Ala Trp Leu Phe Asp Arg
 20 25 30
 Trp Gln Gly Asp Pro Ser Trp Leu Pro His Pro Val Val Gly Phe Gly
 35 40 45
 Lys Leu Ile Ala Trp Gly Glu Lys Cys Leu Asn Ala Gly Arg Ala Arg
 50 55 60
 Val Trp Lys Gly Gly Met Met Ser Val Ala Leu Ile Val Gly Val Tyr

```

65          70          75          80
Phe Phe Thr Phe Leu Phe Phe Lys Val Ile Gly Glu Tyr Ser Ile Ile
      85          90          95
Leu Thr Ala Leu Ile Gln Thr Leu Leu Ile Phe Cys Cys Leu Ala Gly
      100          105          110
Thr Thr Leu Ile Arg Glu Val Arg Met Val Phe Glu Ala Val Asp Arg
      115          120          125
Ser Leu Asp Glu Gly Arg Lys Gln Val Ala Arg Ile Val Gly Arg Asp
      130          135          140
Thr Ser Ala Leu Ser Ala Gln Glu Val Arg Thr Ala Ala Leu Glu Thr
      145          150          155          160
Leu Ala Glu Asn Leu Ser Asp Gly Val Ile Ala Pro Leu Phe Trp Tyr
      165          170          175
Ala Val Leu Gly Val Pro Gly Met Met Ala Tyr Lys Met Val Asn Thr
      180          185          190
Leu Asp Ser Met Ile Gly Tyr Arg Asn Glu Arg Tyr Arg Gln Phe Gly
      195          200          205
Cys Ile Ala Ala Arg Ile Asp Asp Val Ala Asn Tyr Ile Leu Ala Arg
      210          215          220
Leu Thr Ala Leu Leu Met Ile Leu Val Thr Glu Arg Phe Ser Leu Leu
      225          230          235          240
Arg Phe Val Gly Lys Tyr Gly Ser Arg His Ala Ser Pro Asn Ser Gly
      245          250          255
Ile Pro Glu Ala Ala Leu Ala Gly Ile Leu Asn Cys Arg Phe Gly Gly
      260          265          270
Pro His Tyr Tyr Phe Gly Glu Glu Val Trp Lys Pro Phe Ile Gly Asn
      275          280          285
Asn Glu Arg Ala Leu Thr Thr Glu Asp Met Lys Lys Ala Val Cys Val
      290          295          300
Asn Arg Gln Ala Glu Val Leu Met Val Val Leu Val Trp Leu Thr Ile
      305          310          315          320
Leu Leu Ser Leu Ser
      325

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<210> 5910

<211> 132

<212> PRT

<213> B.fragilis

<400> 5910

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Phe Ile Ile Phe Val Phe Val Leu Lys Glu Thr Arg Cys Ile Met Lys
1          5          10          15
Glu Pro Glu Lys Tyr Lys Gln Pro Glu Glu Glu Thr Thr Arg Leu Ser
      20          25          30
Glu Pro Thr Val Ala Tyr Asn Ser Met Ala Tyr Leu Glu Leu Glu Ala
      35          40          45
Glu Lys Ala Glu Leu Ile Arg Thr Ile Ala Asn Ile Asp Ser Lys Glu
      50          55          60
Ile Ile Asp Lys Val Lys Gln Lys Leu His Asp Val Leu Gly Leu Asp
      65          70          75          80
Lys Asn Arg Glu Thr Glu Pro Glu Cys Lys Lys Tyr Ile Leu Ala Asn
      85          90          95
Ile Lys Glu Ala Phe Cys Glu Gln Glu Arg Val Arg Thr Gly Glu Ser
      100          105          110
Lys Ser Arg Pro Ala Glu Glu Leu Ala Glu Leu Ile Arg Glu Arg
      115          120          125
Glu Gly Asn Asp
      130

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<210> 5911
 <211> 1084
 <212> PRT
 <213> B.fragilis

<400> 5911

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Ile Asn Leu Ile Asp Asn His Met Asn Lys Lys Leu Ile Leu Ser Ile
1           5           10           15
Phe Val Leu Ala Gly Ala Pro Val Leu Leu Ser Ala Ala Gly Glu Ala
          20           25           30
Arg Leu Leu Arg Phe Pro Ala Thr Asn Gly Asn Glu Ile Val Phe Ser
          35           40           45
Tyr Ala Gly Asp Leu Tyr Lys Val Pro Ala Ser Gly Gly Glu Ala Gln
          50           55           60
Arg Leu Thr Ser His Val Gly Tyr Glu Met Phe Pro Arg Phe Ser Pro
65           70           75           80
Asp Gly Lys Thr Ile Ala Phe Thr Gly Gln Tyr Asp Gly Asn Thr Glu
          85           90           95
Val Tyr Thr Met Pro Ala Thr Gly Gly Glu Pro Leu Arg Ile Thr Tyr
          100          105          110
Thr Ala Thr Asn Ser Arg Asp Asp Leu Gly Asp Arg Met Gly Pro Asn
          115          120          125
Asn Ile Val Met Thr Trp Thr Pro Asp Gly Gln Arg Ile Val Tyr Arg
          130          135          140
Asn Arg Ile Ser Asp Gly Phe Ser Gly Lys Leu Phe Thr Val Asp Lys
145          150          155          160
Glu Gly Gly Leu Ser Glu Val Ile Pro Leu Pro Glu Gly Gly Phe Cys
          165          170          175
Ser Tyr Ser Pro Asp Gly Lys Gln Leu Ala Tyr Asn Arg Val Met Arg
          180          185          190
Glu Phe Arg Thr Trp Lys Tyr Tyr Lys Gly Gly Met Ala Asp Asp Ile
          195          200          205
Trp Val Tyr Asn Pro Gly Asn Lys Thr Val Glu Asn Val Thr Asn Asn
          210          215          220
Val Ala Gln Asp Ile Phe Pro Met Trp Ile Gly Asp Glu Ile Phe Phe
225          230          235          240
Leu Ser Asp Arg Asp Arg Ile Met Asn Ile Phe Ala Tyr Asn Thr Lys
          245          250          255
Thr Lys Gln Thr Val Lys Val Thr Asn Phe Thr Glu Tyr Asp Val Lys
          260          265          270
Phe Pro Ser Val His Gly Asn Thr Ile Val Phe Glu Asn Gly Gly Tyr
          275          280          285
Ile Tyr Lys Met Asp Ala Ala Ala Arg Lys Ala Glu Lys Val Asn Ile
          290          295          300
Thr Leu Ala Ser Asp Asn Ile Tyr Ala Arg Thr Asp Leu Lys Glu Gly
305          310          315          320
Ala Asn Tyr Val Thr Ala Ala Ser Leu Ser Pro Asp Gly Ala Arg Met
          325          330          335
Val Val Thr Ser Arg Gly Glu Val Phe Asn Leu Pro Val Glu Lys Gly
          340          345          350
Val Thr Lys Asn Ile Thr Arg Ser Pro Gly Ala His Asp Arg Asp Ala
          355          360          365
Gln Trp Ser Pro Asp Gly Thr Gln Ile Ala Tyr Ile Ser Asp Ala Thr
          370          375          380
Gly Glu Thr Glu Leu Tyr Leu Gln Asn Ala Ala Gly Gly Glu Pro Met
385          390          395          400
Gln Phe Thr His Lys Asn Asp Thr Tyr Ile Arg Asp Phe Lys Trp Ser
          405          410          415
Pro Asp Ser Lys Lys Ile Val Tyr Met Asp Arg Lys Asn Arg Val Asn

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	420		425		430
Leu Leu Asp Val Ala Ser Gly Lys Val Ser Leu Leu Leu Gln Asp Pro					
	435		440		445
Val Gly Val Pro Gly Gly Val Thr Phe Ser Pro Asp Ser Glu Trp Leu					
	450		455		460
Thr Tyr Thr Arg Met Gly Lys Asn Glu Ile Asn Val Val Tyr Val Tyr					
465		470		475	480
Asn Ile Ala Glu Lys Lys Glu Tyr Pro Val Thr Asp Lys Trp Tyr Asn					
	485		490		495
Ser Ser Ser Pro Val Phe Ser Ala Asp Gly Lys Tyr Leu Ile Phe Ser					
	500		505		510
Ser Ala Arg Asp Phe Asn Pro Thr Tyr Gly Ser Leu Glu Trp Asn His					
	515		520		525
Val Tyr Asn Asn Met Tyr Gly Val Tyr Ile Ala Leu Leu Ser Lys Asp					
	530		535		540
Thr Ser Ser Pro Phe Met Gln Lys Asp Ala Glu Val Ala Val Ser Asn					
545		550		555	560
Ala Thr Pro Lys Ser Gly Asp Lys Lys Pro Ala Asp Lys Lys Glu Val					
	565		570		575
Ala Asp Ala Ser Leu Val Lys Phe Asp Pro Asp Gly Ile Thr Asp Arg					
	580		585		590
Ile Val Arg Leu Pro Leu Ser Pro Ser Tyr Tyr Gly Asn Phe Tyr Ser					
	595		600		605
Asp Gly Asn Lys Val Tyr Tyr Trp Gly Arg Gly Gly Thr Lys Met Tyr					
	610		615		620
Asp Leu Ala Ser Gln Lys Glu Glu Ser Ile Ala Asp Gly Ala Ser Met					
625		630		635	640
Asp Val Thr Tyr Asp Gly Lys Lys Ala Leu Phe Phe Lys Gly Arg Gln					
	645		650		655
Ile Tyr Val Thr Asn Leu Pro Ser Gly Lys Thr Glu Leu Thr Ala Pro					
	660		665		670
Val Asp Leu Ser Asn Met Lys Ile Thr Val Asp Tyr Pro Lys Glu Trp					
	675		680		685
Ala Gln Ile Phe Asp Glu Ala Trp Arg Ala Tyr Arg Asp Gly Phe Tyr					
	690		695		700
Gln Glu Ser Met His Gly Val Asp Trp Lys Ala Ile Lys Glu Lys Tyr					
705		710		715	720
Ala Val Leu Leu Pro Tyr Val Lys Thr Arg Leu Asp Leu Asn Tyr Ile					
	725		730		735
Ile Gly Glu Met Ile Gly Glu Leu Asn Cys Gly His Ala Tyr Val Asn					
	740		745		750
Pro Gly Glu Thr Glu Gln Pro Lys Arg Ile Asn Thr Gly Leu Leu Gly					
	755		760		765
Ala Glu Ile Thr Arg Asp Lys Ser Gly Phe Phe Arg Leu Glu Lys Ile					
	770		775		780
Phe Pro Gly Ala Ser Trp Ser Lys Glu Leu Arg Ser Pro Leu Thr Glu					
785		790		795	800
Pro Gly Val Asp Val Lys Val Gly Glu Tyr Ile Val Ala Ile Asp Gly					
	805		810		815
Val Pro Thr Asn Thr Val Lys Asp Met Tyr Ser Leu Leu Val Gly Lys					
	820		825		830
Ala Glu Ile Pro Thr Glu Ile Ser Leu Asn Ala Lys Pro Gln Leu Ser					
	835		840		845
Gly Ala Arg Lys Val Val Ile Ser Pro Leu Ala Asn Glu Tyr Pro Leu					
	850		855		860
Ile His Tyr Asn Trp Val Gln Asp Asn Ile Lys Lys Val Asp Gln Ala					
865		870		875	880
Ser Asn Gly Arg Ile Gly Tyr Ile Tyr Ile Pro Asp Met Gly Pro Glu					
	885		890		895

Gly Leu Asn Glu Phe Ala Arg Tyr Phe Tyr Pro Gln Leu Asp Lys Glu
 900 905 910
 Gly Leu Ile Ile Asp Asp Arg Ala Asn Gly Gly Gly Asn Val Ser Pro
 915 920 925
 Met Ile Leu Glu Arg Leu Ser Arg Glu Pro Tyr Arg Leu Thr Met Gly
 930 935 940
 Arg Gly Thr Ser His Val Gly Thr Val Pro Asp Ala Val Gln Val Gly
 945 950 955 960
 Pro Lys Val Cys Leu Ile Asn Lys Tyr Ser Ala Ser Asp Gly Asp Leu
 965 970 975
 Phe Pro Trp Gly Phe Arg Ala Leu Gly Leu Gly Lys Leu Ile Gly Thr
 980 985 990
 Arg Thr Trp Gly Gly Ile Val Gly Ile Ser Gly Ser Leu Pro Tyr Met
 995 1000 1005
 Asp Gly Thr Asp Ile Arg Val Pro Phe Phe Thr Ser Tyr Asp Pro Lys
 1010 1015 1020
 Thr Gly Lys Trp Ile Ile Glu Asn His Gly Val Asp Pro Asp Ile Leu
 1025 1030 1035 1040
 Ile Asp Asn Asp Pro Val Lys Glu Trp Asn Gly Glu Asp Gln Gln Leu
 1045 1050 1055
 Asn Arg Ala Ile Glu Glu Val Met Lys Gln Leu Lys Asp Arg Lys Pro
 1060 1065 1070
 Leu Pro Pro Val Pro Ala Pro Arg Asp Phe Ser Lys
 1075 1080

<210> 5912
 <211> 448
 <212> PRT
 <213> B.fragilis

<400> 5912
 Lys Pro Thr Ile Met Glu Cys Arg Met Ile Ser Gln Phe Leu Ile Ala
 1 5 10 15
 Ala Pro Ser Ser Gly Ser Gly Lys Thr Thr Val Ser Arg Gly Leu Met
 20 25 30
 Ala Leu Leu Ile Lys Lys Gly Leu Lys Val Gln Pro Phe Lys Cys Gly
 35 40 45
 Pro Asp Tyr Ile Asp Thr Lys Tyr His Thr Ala Val Cys Arg Arg Pro
 50 55 60
 Ser Ile Asn Leu Asp Thr Phe Met Ala Ser Ala Gly His Val Lys Glu
 65 70 75 80
 Leu Tyr Ala Arg Tyr Ala Thr Gly Ala Asp Ala Cys Ile Thr Glu Gly
 85 90 95
 Met Met Gly Met Tyr Asp Gly Tyr Asp Arg Asp Arg Gly Ser Ser Ala
 100 105 110
 Glu Val Ala Gly Leu Leu Asn Leu Pro Val Ile Leu Val Val Asp Ala
 115 120 125
 Lys Ser Ala Ala Tyr Ser Val Ala Pro Leu Leu Ser Gly Phe Ile His
 130 135 140
 Phe Arg Pro Glu Ile Arg Ile Ala Gly Val Ile Phe Asn Arg Val Gly
 145 150 155 160
 Ser Pro Arg His Tyr Glu Met Leu Gln Glu Val Cys Thr Glu Leu Gly
 165 170 175
 Ile Thr Cys Leu Gly Tyr Leu Pro Lys Gln Glu Ser Leu Val Gln Glu
 180 185 190
 Ser Arg Tyr Leu Gly Leu Asp Phe Ser His Ser Lys Gly Thr Asp Ala
 195 200 205
 Leu Glu Glu Leu Thr Gly Leu Met Glu Lys Tyr Ile Asp Tyr Asn Arg
 210 215 220

Leu Leu Glu Glu Thr Lys Leu Pro Ala Pro Ile Pro Pro Val Ser Asn
 225 230 235 240
 Ile Ser Leu Gln Glu Asp Leu Lys Ile Ser Val Ala Cys Asn Ser Glu
 245 250 255
 Ser Phe Ser Phe Ile Tyr Gln Glu His Leu Asp Val Leu Cys Arg Leu
 260 265 270
 Gly Thr Val Ile Leu Phe Asn Pro Glu Asp Asn Arg Pro Leu Pro Glu
 275 280 285
 Gly Thr Asp Leu Leu Tyr Leu Pro Gly Gly Tyr Pro Glu Lys His Tyr
 290 295 300
 Glu Lys Leu Arg Gln Ala Trp Gln Arg Met Gln Ser Ile Arg Asn Tyr
 305 310 315 320
 Ala Glu Ser Gly Gly Arg Val Leu Ala Glu Cys Gly Gly Met Ile Tyr
 325 330 335
 Leu Ser Lys Gly Ile Leu Leu Asp Arg Ser Glu His Ser Asp Ser Glu
 340 345 350
 Val Gly Leu Gln Ala Gly Val Leu Pro Phe Phe Ile Ser Asn Arg Lys
 355 360 365
 Ala Asp Arg Arg Leu Thr Leu Gly Tyr Arg Gln Phe Asp Tyr Asn Gly
 370 375 380
 Gln His Leu Arg Gly His Glu Phe His Tyr Thr Gln Phe Glu Pro Lys
 385 390 395 400
 Pro Glu Glu Ser Leu Glu Ser Val Thr Gln Val Tyr Asn Ala Lys Arg
 405 410 415
 Met Pro Val Ser Thr Pro Val Phe Arg Tyr Lys Asn Val Ile Ala Ser
 420 425 430
 Tyr Thr His Leu Tyr Trp Gly Glu Ile Asp Leu Leu Lys Leu Phe Glu
 435 440 445

<210> 5913

<211> 821

<212> PRT

<213> B.fragilis

<400> 5913

Leu Phe Pro Phe Gln Asn Lys Ala Asn Met Ile Ile Ser Lys Asn Pro
 1 5 10 15
 Leu Gly Asp Ile Ala Lys Leu Asn Arg Ile Cys Ala Ser Ala Gln Ile
 20 25 30
 Gly Trp Trp Glu Val Asn Phe Thr Gly Lys Cys Phe Ile Ser Glu
 35 40 45
 Thr Leu Leu Lys Ser Leu Glu Val Ser Ser Val Trp Leu Asp Ile Asp
 50 55 60
 Glu Leu Met Ser Thr Val Arg Gln Asp Tyr Arg Lys Arg Ile Thr Asp
 65 70 75 80
 Glu Phe Thr Ser Ile Pro Arg Lys Gly Val Phe Glu Gln Thr Phe Pro
 85 90 95
 Val Thr Ser Gly Arg Gly Asn Val Phe Trp Ile His Cys Ala Leu Ser
 100 105 110
 Met Glu Glu Glu Asn Glu Glu Gly Gln Leu Ile Ala Thr Gly Tyr Gly
 115 120 125
 Gln Arg Ile Glu Ser Pro Glu Thr Gln Gly Tyr Gln Cys Ala Trp Asn
 130 135 140
 Gln Arg Ile Asn Asn Leu Tyr Cys Gln Asn Ser Ile Ala Asn Ser
 145 150 155 160
 Leu Leu Lys Leu Leu Ser Asn Asp Thr Gly Asp Glu Leu Phe Glu Glu
 165 170 175
 Met Leu Ala Asp Ile Leu Tyr Phe Phe Lys Gly Ala Arg Val Tyr Ile
 180 185 190

Val	Arg	Tyr	Asn	Trp	Lys	Asn	Gly	Asn	Gln	Ser	Cys	Leu	Tyr	Glu	Val
		195					200					205			
Ala	Ala	Cys	Asn	Val	Ile	Thr	Leu	Lys	Glu	Lys	Leu	Gln	Asn	Ile	Cys
	210					215					220				
Ser	Glu	Asp	Ala	Pro	Trp	Phe	Tyr	Gln	Gln	Ile	His	Ala	Asn	Arg	Pro
225					230					235					240
Val	Ile	Leu	Asn	Ser	Pro	Asp	Glu	Leu	Pro	Pro	Leu	Ala	Val	Arg	Asp
			245						250					255	
Arg	Glu	Val	Leu	Ala	Glu	Asn	Gly	Thr	Asn	Ser	Met	Met	Leu	Ala	Pro
		260						265					270		
Leu	Met	Arg	Glu	Glu	Gly	Val	Trp	Gly	Tyr	Met	Gly	Ile	Asp	Ile	Val
	275						280					285			
Asp	Gly	Tyr	Arg	Lys	Trp	Asn	Ser	Glu	Asp	Tyr	Gln	Trp	Phe	Ser	Ser
	290					295					300				
Leu	Ala	Asn	Ile	Ile	Ser	Ile	Cys	Met	Glu	Leu	Arg	Met	Ile	Lys	Glu
305					310					315					320
Arg	Val	Met	His	Ser	Glu	Lys	Leu	Phe	His	Asp	Ile	Phe	Thr	Asn	Ile
			325						330					335	
Pro	Val	Gly	Leu	Glu	Leu	Tyr	Asn	Lys	Glu	Gly	Met	Leu	Leu	Asp	Cys
		340						345					350		
Asn	Asn	Arg	Asn	Leu	Glu	Ile	Phe	Gly	Val	Gly	Asp	Lys	Asn	Arg	Ile
	355						360					365			
Ile	Gly	Leu	Asn	Leu	Phe	Glu	Ser	Pro	Asn	Met	Thr	Arg	Asp	Ile	His
	370					375					380				
Glu	Ser	Leu	Arg	Ala	Gly	Arg	Pro	Gly	Thr	Phe	His	Leu	Lys	Tyr	Asp
385					390					395					400
Phe	Asp	Glu	Glu	Arg	Arg	Leu	Phe	Gln	Ser	Glu	Arg	Arg	Gly	Val	Met
			405						410					415	
Asp	Leu	Asp	Ile	Arg	Ser	Leu	Met	Leu	Tyr	Asp	Ala	Glu	Asp	Asn	Leu
		420						425				430			
Ser	Asn	Tyr	Leu	Leu	Val	Asn	Ile	Asp	Asn	Thr	Glu	Arg	Asn	Asn	Ala
		435					440					445			
Leu	Ser	Lys	Val	His	Asp	Phe	Glu	Asn	Phe	Phe	Ser	Ile	Ile	Ser	Asp
	450					455					460				
Tyr	Ser	Lys	Val	Gly	Tyr	Ala	Lys	Ile	Asn	Leu	Leu	Asp	His	Thr	Gly
465					470					475					480
Phe	Ala	Val	Arg	Gln	Trp	Tyr	Arg	Asn	Leu	Gly	Glu	Ser	His	Asp	Thr
			485						490					495	
Pro	Leu	Ala	Asp	Ile	Ile	Gly	Ile	Phe	Ser	His	Met	His	Pro	Asp	Asp
		500						505					510		
Arg	Lys	Ser	Val	Leu	Asp	Phe	Tyr	Glu	Lys	Ala	Lys	Ala	Gly	Thr	Glu
		515					520					525			
Arg	Phe	Phe	Asp	Gly	Asp	Leu	Arg	Ile	Arg	Pro	Ala	Asp	Gly	Ala	Asp
	530					535					540				
Arg	Trp	Asn	Trp	Ile	His	Lys	Ser	Ser	Met	Val	Thr	Ala	Tyr	Gln	Ser
545					550					555					560
Pro	Asn	Pro	Arg	Leu	Glu	Leu	Val	Glu	Val	Asn	Tyr	Asp	Ile	Thr	Val
			565					570					575		
Gln	Lys	Glu	Thr	Glu	Ala	Glu	Leu	Arg	Ala	Ala	Arg	Asp	Lys	Ala	Glu
			580					585					590		
Glu	Ser	Asn	Arg	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Ile	Ser	His	Glu
	595						600					605			
Ile	Arg	Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Asp	Leu	Leu	Met
	610					615					620				
Thr	Val	Asp	Asp	Pro	Ala	Glu	Gln	Glu	Glu	Phe	Arg	Arg	Thr	Ile	Gln
625					630					635					640
Lys	Asn	Asn	Thr	Leu	Leu	Leu	Gln	Leu	Phe	Ser	Asp	Ile	Ile	Asp	Leu
			645						650				655		
Ser	Lys	Ile	Asp	Ala	Gly	Ser	Phe	Glu	Tyr	Met	Pro	Lys	Pro	Val	Cys

660	665	670
Leu Tyr Gln Phe Cys Ala Met Met Val Gln Lys Met Arg Asn Lys Val		
675	680	685
Pro Glu Gly Val Glu Leu Gln Ile Asp Glu Asp Ser Pro Leu Asp Thr		
690	695	700
Trp Phe Ser Ala Asp Ser Gly Tyr Leu Asn Gln Val Val Thr Asn Phe		
705	710	715
Met Ser Asn Ala Ile Lys Phe Thr His Arg Gly Thr Ile Thr Val Gly		
725	730	735
Tyr Arg Ile Asp Ala Arg Gln Gln Leu Glu Met Phe Val Glu Asp Thr		
740	745	750
Gly Ile Gly Ile Ser Ile Glu Asn Gln Glu Ala Val Phe Asp Arg Phe		
755	760	765
Met Lys Val Asp Ser Phe Val Gln Gly Thr Gly Leu Gly Leu Pro Leu		
770	775	780
Cys Lys Ser Ile Ile Glu Lys Met Gly Gly His Ile Gly Val Ile Ser		
785	790	795
Glu Leu Gly Lys Gly Ser Arg Phe Trp Phe Thr Leu Pro Ala Phe Ser		
805	810	815
Cys Ile Pro Thr Arg		
820		

<210> 5914

<211> 289

<212> PRT

<213> B.fragilis

<400> 5914

Gln Thr Met Ile Glu Gly His Gly Asp Asp Ser Tyr Lys Tyr Arg His		
1	5	10
Pro Ile Arg Ser Asn Phe Ser Ser Asn Val Tyr Asn Lys Val Asn Leu		
20	25	30
Asp Gly Leu Arg Ala His Leu Cys Gly Arg Ile Ser Ala Ile Ser Ala		
35	40	45
Tyr Pro Glu Pro Glu Pro Tyr Thr Leu Glu Ala Arg Leu Ala Asp Arg		
50	55	60
His Ala Leu Pro Ala Ala Ser Val Cys Val Thr Asn Gly Ala Thr Glu		
65	70	75
Ala Ile Tyr Leu Ile Ala Gln Thr Phe Arg Gly Thr Asn Thr Ala Ile		
85	90	95
Leu Met Pro Thr Phe Ser Glu Tyr Ala Asp Ala Cys Arg Met His Gly		
100	105	110
His Lys Val Thr Ser Leu Tyr Thr Leu Asp Ala Val Pro Glu Asp Val		
115	120	125
His Met Val Trp Leu Cys Asn Pro Asn Asn Pro Thr Gly Glu Val Arg		
130	135	140
Asp Lys Lys Tyr Leu Thr Glu Leu Ile Ala Lys His Pro Arg Val Cys		
145	150	155
Phe Val Ile Asp Gln Ser Tyr Glu Tyr Phe Thr Leu Lys Glu Leu Phe		
165	170	175
Thr Ala Gln Glu Ala Ala Gly Phe Pro Asn Val Ile Leu Leu His Ser		
180	185	190
Met Thr Lys Arg Tyr Ala Ile Pro Gly Leu Arg Leu Gly Tyr Val Thr		
195	200	205
Ala His Pro Gly Leu Ile Gly Arg Leu Arg Thr Asn Arg Met Pro Trp		
210	215	220
Ser Val Asn Gln Leu Ala Ile Glu Ala Gly Leu Tyr Leu Leu Ser Glu		
225	230	235
Gly Ile Pro Ala Gly Leu Ser Met Lys Asp Tyr Leu Ala Glu Cys Ala		

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<210> 5915
<211> 103
<212> PRT
<213> B.fragilis
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<210> 5916
<211> 250
<212> PRT
<213> B.fragilis
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<400> 5916
Asp Leu Pro Met Asn Ile Leu Ala Ala Phe Ile Phe Phe Thr Arg Leu
1          5          10          15
Pro Phe Trp Arg Ile Arg Glu Val Pro Ala Glu Cys Phe Lys His Val
          20          25          30
Val Pro Tyr Trp Pro Leu Ser Gly Trp Leu Thr Gly Gly Ile Met Ala
          35          40          45
Gly Val Leu Trp Leu Ser Ala Gln Ile Leu Pro Phe Ser Val Ala Val
          50          55          60
Leu Leu Ala Leu Ala Ala Arg Leu Leu Ile Thr Gly Ala Leu His Glu
65          70          75          80
Asp Gly Leu Ala Asp Phe Phe Asp Gly Phe Gly Gly Gly Thr Asn Arg
          85          90          95
Glu Arg Ile Leu Ser Ile Met Lys Asp Ser His Ile Gly Ser Tyr Gly
          100          105          110
Val Ile Gly Leu Ile Phe Tyr Phe Leu Leu Leu Trp Ser Leu Leu Met
          115          120          125
Ser Leu Pro Leu Ser Phe Ala Cys Ile Thr Leu Ile Ala Gly Asp Thr
          130          135          140
Ile Ser Lys Leu Thr Ser Ser Gln Ile Ile Asn Phe Leu Pro Tyr Ala
145          150          155          160
Arg Lys Glu Glu Glu Ser Lys Ala Lys Val Val Tyr Asn Arg Met Ser
          165          170          175
Gly Gly Glu Cys Ala Phe Gly Leu Leu Cys Gly Ile Leu Pro Ser Ala
          180          185          190

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Leu Leu Leu Pro Tyr Arg Tyr Trp Met Ala Ile Val Phe Pro Leu Ile
 195 200 205
 Met Leu Tyr Leu Leu Cys Thr Leu Met Lys Arg Lys Leu Gln Gly Tyr
 210 215 220
 Thr Gly Asp Cys Cys Gly Ala Leu Phe Leu Leu Ser Glu Leu Ser Phe
 225 230 235 240
 Tyr Leu Gly Ile Val Ile Leu Met Phe Ile
 245 250

<210> 5917
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 5917
 Tyr Phe Ile Phe Pro Phe Pro Asp Ala Lys Tyr Cys Ala Ile Ala Met
 1 5 10 15
 Gly Ile Ser Glu Thr Ile Phe Ile Phe Ala Trp Leu Tyr Lys Ile Lys
 20 25 30
 Ala Thr His Ala Val Val Ala Gln Leu Ala Glu Arg Arg Leu Pro Lys
 35 40 45
 Pro Gln Val Thr Ser Ser Thr Leu Ala Tyr Arg Ser Lys Val Tyr Leu
 50 55 60
 Leu Asn
 65

<210> 5918
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 5918
 Leu Lys Ser Ser Thr Asn Arg Phe Ser Tyr Ile Ile Ile Phe Ser Ile
 1 5 10 15
 Gly Asn Thr Lys Ile Pro Ser Ala Pro Ser Ala Phe Ser Leu Pro Met
 20 25 30
 Ile Ser Gln Asn Arg Phe Ser Ser Thr Val Cys Thr Glu His Gln
 35 40 45
 Pro Ser Cys Ala Asn Gly Ile Thr Val Gly Leu Phe Ile Pro Gly Ser
 50 55 60
 Thr Ala Ile Ile Ser Ser Ser Leu Ser Leu Gly Ala Phe Ile Ser Thr
 65 70 75 80
 Tyr Phe Leu Ser Ser Ala Val Phe Thr Ala Ser Met Arg Lys Ser Asn
 85 90 95
 Ser Ser Asn Ile Ser Phe Phe Ser Leu Leu Ile Phe Leu Leu Pro Ile
 100 105 110
 Ser Lys Ala Ser Asp Leu Ile Thr Thr Ser Thr Ser Phe Arg Arg Leu
 115 120 125
 Leu Thr Arg Val Glu Pro Glu Leu Thr Ile Ser Lys Ile Ala Ser Ala
 130 135 140
 Asn Pro Met Pro Gly Ala Thr Ser Thr Glu Pro Val Met Thr Cys Thr
 145 150 155 160
 Ser Ala Phe Thr Pro Leu Leu Phe Ile Lys Ala Ser Lys Ile Pro Gly
 165 170 175

<210> 5919
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 5919

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Leu Ser Ser Pro Ile Ile Leu Val Met Val Asn Val Ile Arg Arg Met
1          5          10          15
Lys Ala Asn Thr Ser Ile Ile Glu Lys Glu Ser Ile Arg Phe Leu Ile
          20          25          30
Asn Leu Ser Gln Leu Phe Leu Gly Thr Ala Phe Ile Pro Gln Ile Glu
          35          40          45
Phe Asn Glu Leu Cys Ile Ser Ala Lys Ile Val Val Ala Pro Lys Ile
          50          55          60
Glu Ile Pro Lys Leu Thr Lys Ala Ala Asp Leu Glu Glu Ser Val Phe
65          70          75          80
Ser Ala Phe Ser Ile Ile Glu Arg Arg Ala Ser Val Thr Ser Gly Pro
          85          90          95
Thr Ile Gly Cys Ser Trp Thr
          100

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<210> 5920

<211> 64

<212> PRT

<213> B.fragilis

<400> 5920

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Leu Arg Leu Leu Ser Ile Arg Phe Ser Ser Ala Asp Thr Cys Leu Val
1          5          10          15
Ala Leu Leu Ser Ala Ala Tyr Val Val Thr Glu Tyr Lys Val Thr Ala
          20          25          30
Ile Thr Ile Ser Ala Ile Leu Lys Asp Leu Pro Thr Val Asn Val Val
          35          40          45
Phe Pro Met Phe Val Leu Cys Leu Phe Met Met His Val Val Gln Ser
          50          55          60

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<210> 5921

<211> 434

<212> PRT

<213> B.fragilis

<400> 5921

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Thr Leu Lys Leu Lys Ile Met Lys Leu Ile Lys Tyr Pro Asp Arg Ser
1          5          10          15
Gln Trp Asn Glu Ile Leu Lys Arg Pro Val Leu Glu Thr Glu Asn Leu
          20          25          30
Phe Asp Thr Val Arg Asn Ile Ile Asn Arg Val Arg Ala Gly Gly Asp
          35          40          45
Trp Val Val Met Glu Tyr Glu Ala Val Phe Asp Lys Ala Glu Leu Thr
          50          55          60
Ser Leu Ala Val Thr Ser Ala Glu Ile Glu Glu Ala Glu Lys Glu Val
65          70          75          80
Pro Ile Glu Leu Lys Ala Ala Ile Tyr Leu Ala Lys Arg Asn Ile Glu
          85          90          95
Thr Phe His Ser Ala Gln Arg Phe Glu Gly Lys Lys Val Asp Thr Met
          100          105          110
Glu Gly Val Thr Cys Trp Gln Lys Ala Val Ala Ile Glu Lys Val Gly
          115          120          125
Leu Tyr Ile Pro Gly Gly Thr Ala Pro Leu Phe Ser Thr Val Leu Met
          130          135          140
Leu Ala Ile Pro Ala Lys Ile Ala Gly Cys Lys Glu Ile Val Leu Cys
145          150          155          160
Thr Pro Pro Asp Lys Asn Gly Lys Val His Pro Ala Ile Leu Phe Ala

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<210> 5922
<211> 119
<212> PRT
<213> B.fragilis
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[illegible]

<210> 5923
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 5923

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Cys Ile Ser Thr Ser Phe Lys Phe Ile Thr Asp Gln Phe Phe Ser Glu
1           5           10           15
Glu Thr Lys Asn Gln Ser Asn Ser Ser Thr Lys Gln Arg Leu Ser Lys
           20           25           30
Met Ser Ser Pro His Tyr Asn Leu Thr Lys Pro Gln Ile Leu Phe Phe
           35           40           45
Ser Phe His Lys Lys Val Ile Lys Pro Asp Leu Gln Lys Gln Ile Lys
           50           55           60
Arg Leu Pro Leu
65

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<210> 5924
 <211> 636
 <212> PRT
 <213> B.fragilis

<400> 5924

```

Leu Cys Thr Thr Cys Ile Ile Asn Lys His Lys Thr Asn Ile Gly Lys
1           5           10           15
Thr Thr Phe Thr Val Gly Arg Ser Phe Asn Ile Ala Leu Ile Val Ile
           20           25           30
Ala Val Thr Leu Tyr Ser Val Thr Thr Tyr Ala Ala Asp Asn Lys Ala
           35           40           45
Thr Arg His Val Ser Ala Leu Leu Asn Leu Ile Asp Asn Ser Leu Asn
           50           55           60
Tyr Ser Lys Glu Ala Pro Asn Asp Ser Ile Ile Gln Trp Gly Asn Glu
65           70           75           80
Leu Ala Pro Leu Leu Lys Lys Gln Lys Glu Tyr Lys Thr Leu Phe Gln
           85           90           95
Leu Lys Gln Leu Ile Val Thr Ala Tyr Ala Ser Arg Gly Asp Met Asn
           100          105          110
Met Ala Ile Asp His Ala Arg Arg Met Tyr Lys Glu Ala Lys Glu Leu
           115          120          125
Asn Ser Pro Ile Gly Ile Ala Leu Ser Ser Arg Ala Ile Gly Asp Ala
           130          135          140
Tyr Leu Asn Ala Asn Met Gln Gln Pro Ala Ile Glu Ser Tyr Lys Glu
145           150          155          160
Ala Leu Glu Leu Leu Asp Lys Ile Pro Gly Ser Glu Ile Leu Glu Gln
           165          170          175
Glu Ile Leu Pro Lys Phe Ile Leu Thr Leu Ile Gln Ala Ser His Met
           180          185          190
Asp Glu Val Arg Ile Tyr Leu Gln Lys Phe Glu Asn Leu Tyr Ala Asp
           195          200          205
Asn Pro Asn Pro Thr Phe His Phe Phe Ile Cys Ala Cys Asn Ala Tyr
           210          215          220
Tyr Asn Ile Glu Ser Gly Asp Pro Glu Lys Gly Lys Ala Glu Leu Asp
225           230          235          240
Lys Ala Arg Lys Ile His Glu Gln Leu Asn Tyr Leu Tyr Leu Arg Ser
           245          250          255
Ile Tyr Asn Tyr Ile Leu Ala Gln Tyr Tyr Gln Ala Val Gly Lys Tyr
           260          265          270
Glu Leu Ala Leu Gln Gln Tyr Glu Cys Leu Thr Lys Val Pro Lys Ala
           275          280          285

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Pro Ala Pro Asn Lys His Ile Gly Leu Gln Leu Glu Cys Ala Gln Leu
 290 295 300
 Leu Thr Gln Met Gly Arg Thr Glu Glu Ala Tyr Arg Ile Tyr Gln Lys
 305 310 315 320
 Ala Asn Arg Gln Lys Asp Ser Leu Asn Ala Leu Ser Tyr Ala Arg Gln
 325 330 335
 Ile Asn Asp Leu Arg Gly Met Tyr Gln Ile Asp Arg Met Glu Ile Arg
 340 345 350
 Asn Gln Ile Gln Arg Asn Gln Ile Ile Leu Trp Ile Ile Ile Val Ser
 355 360 365
 Ile Phe Ile Leu Met Leu Val Leu Leu Leu Ile Val Arg Ile Arg Gln
 370 375 380
 Glu Ser Asn Arg Leu Leu Arg Ser Lys Glu Glu Leu Glu Ile Ala Arg
 385 390 395 400
 Lys Tyr Ala Glu Asn Ser Ile Arg Thr Lys Ser Leu Phe Leu Ser Asn
 405 410 415
 Met Ser His Glu Ile Arg Thr Pro Leu Asn Ala Leu Ser Gly Phe Ser
 420 425 430
 Ser Ile Leu Thr Asp Glu Ser Ile Asp Asn Asp Thr Arg Tyr Gln Cys
 435 440 445
 Asn Asp Ile Ile Gln Gln Asn Ser Glu Leu Leu Leu Lys Leu Ile Asn
 450 455 460
 Asp Val Ile Asp Leu Ser Asn Leu Asp Pro Gly Lys Leu Thr Phe Asn
 465 470 475 480
 Phe Lys Glu Cys Asp Ala Val Asn Ile Cys Arg Asn Val Ile Asn Thr
 485 490 495
 Val Gln Lys Val Lys Gln Thr Gln Ala Gly Val Ser Phe Val Thr Ser
 500 505 510
 Leu Asp Arg Leu Thr Leu Arg Thr Asp Glu Ala Arg Leu Gln Gln Val
 515 520 525
 Leu Ile Asn Leu Leu Ile Asn Ala Thr Lys Phe Thr Thr Glu Gly Ser
 530 535 540
 Ile Thr Leu Thr Leu Glu Lys Glu Ser Glu Thr Ile Ala Leu Phe Thr
 545 550 555 560
 Val Thr Asp Thr Gly Cys Gly Ile Leu Arg Glu Lys Gln Asp Gln Ile
 565 570 575
 Phe Asn Arg Phe Glu Lys Leu Asn Glu Gly Ala Gln Gly Thr Gly Leu
 580 585 590
 Gly Leu Ser Ile Cys Arg Leu Ile Glu Gln Ile Gly Gly Arg Ile
 595 600 605
 Trp Ile Asp Pro Asp Tyr Thr Glu Gly Ala Arg Phe Arg Phe Thr His
 610 615 620
 Pro Val Arg Pro Ala Lys Gly Lys Glu Ala Glu Arg
 625 630 635

<210> 5925

<211> 389

<212> PRT

<213> B.fragilis

<400> 5925

Glu Cys Gln Thr Asp Trp Ser Thr Glu Lys Ile Ser Ile Gly Lys Met
 1 5 10 15
 Lys Lys Lys Val Leu Phe Ile Asp Arg Asp Gly Thr Leu Val Ile Glu
 20 25 30
 Pro Pro Val Asp Tyr Gln Leu Asp Ser Leu Glu Lys Leu Glu Phe Tyr
 35 40 45
 Pro Lys Val Phe Arg Asn Leu Gly Phe Ile Arg Ser Lys Leu Asp Phe
 50 55 60

Glu Phe Val Met Val Thr Asn Gln Asp Gly Leu Gly Thr Ser Ser Phe
 65 70 75 80
 Pro Glu Glu Thr Phe Trp Pro Ala His Asn Leu Met Leu Lys Thr Leu
 85 90 95
 Ala Gly Glu Gly Ile Thr Phe Asp Asp Ile Leu Ile Asp Arg Ser Met
 100 105 110
 Pro Glu Asp Cys Ala Ser Thr Arg Lys Pro Arg Thr Gly Met Leu Thr
 115 120 125
 Lys Tyr Ile Ser Asn Pro Glu Tyr Asp Leu Glu Gly Ser Phe Val Ile
 130 135 140
 Gly Asp Arg Pro Thr Asp Val Glu Leu Ala Lys Asn Ile Gly Cys Arg
 145 150 155 160
 Ala Ile Tyr Leu Gln Glu Ser Ile Asp Leu Leu Lys Glu Lys Gly Leu
 165 170 175
 Glu Thr Tyr Cys Ala Leu Ala Thr Thr Asp Trp Asp Arg Val Ala Glu
 180 185 190
 Phe Leu Phe Ala Gly Glu Arg Lys Ala Glu Ile Arg Arg Thr Thr Lys
 195 200 205
 Glu Thr Asp Ile Leu Val Ala Leu Asn Leu Asp Gly Lys Gly Thr Cys
 210 215 220
 Asp Ile Ser Thr Gly Leu Gly Phe Phe Asp His Met Leu Glu Gln Ile
 225 230 235 240
 Gly Lys His Ser Gly Met Asp Leu Thr Ile Arg Val Lys Gly Asp Leu
 245 250 255
 Glu Val Asp Glu His His Thr Ile Glu Asp Thr Ala Ile Ala Leu Gly
 260 265 270
 Glu Cys Ile Tyr Gln Ala Leu Gly Ser Lys Arg Gly Ile Glu Arg Tyr
 275 280 285
 Gly Tyr Ala Leu Pro Met Asp Asp Cys Leu Cys Arg Val Cys Leu Asp
 290 295 300
 Phe Gly Gly Arg Pro Trp Leu Val Trp Asp Ala Glu Phe Lys Arg Glu
 305 310 315 320
 Lys Ile Gly Glu Met Pro Thr Glu Met Phe Leu His Phe Phe Lys Ser
 325 330 335
 Leu Ser Asp Ala Ala Lys Met Asn Leu Asn Ile Lys Ala Glu Gly Gln
 340 345 350
 Asn Glu His His Lys Ile Glu Gly Ile Phe Lys Ala Leu Ala Arg Ala
 355 360 365
 Leu Lys Met Ala Leu Lys Lys Asp Ile Tyr His Phe Glu Met Pro Ser
 370 375 380
 Ser Lys Gly Val Leu
 385

<210> 5926

<211> 938

<212> PRT

<213> B.fragilis

<400> 5926

Lys Lys Lys Thr Thr Val Val Ile Trp Thr Gly Cys Leu Asn Asp Asp
 1 5 10 15
 Arg Phe Val Pro Leu Ala Met Lys Lys Thr Ile Gln Gln Leu Val Leu
 20 25 30
 Glu Arg Ile Leu Ile Leu Asp Gly Ala Met Gly Thr Met Ile Gln Gln
 35 40 45
 Tyr Asn Leu Arg Glu Glu Asp Phe Arg Asn Glu Arg Phe Ala His Ile
 50 55 60
 Pro Gly Gln Leu Lys Gly Asn Asn Asp Leu Leu Cys Leu Thr Arg Pro
 65 70 75 80

Asp Val Ile Arg Asp Ile His Arg Lys Tyr Leu Glu Ala Gly Ala Asp
 85 90 95
 Ile Ile Glu Thr Asn Thr Phe Ser Ser Thr Thr Ile Ser Met Ala Asp
 100 105 110
 Tyr His Val Gln Glu Tyr Val Arg Glu Met Asn Gln Ala Ala Val Lys
 115 120 125
 Leu Ala Arg Glu Val Ala Asp Glu Tyr Thr Ala Leu Asn Pro Asp Lys
 130 135 140
 Pro Arg Phe Val Ala Gly Ser Val Gly Pro Thr Asn Lys Thr Cys Ser
 145 150 155 160
 Met Ser Pro Asp Val Asn Asn Pro Ala Tyr Arg Ala Val Thr Tyr Asp
 165 170 175
 Glu Met Ala Asp Ala Tyr Gln Gln Gln Met Glu Ala Met Leu Glu Ser
 180 185 190
 Gly Val Asp Ala Leu Leu Ile Glu Thr Ile Phe Asp Thr Leu Asn Ala
 195 200 205
 Lys Ala Ala Ile Leu Ala Ala Glu Arg Ala Met Lys Ala Thr Gly Val
 210 215 220
 Lys Val Pro Val Met Leu Ser Val Thr Val Ser Asp Thr Gly Gly Arg
 225 230 235 240
 Thr Leu Ser Gly Gln Thr Leu Glu Ala Phe Leu Ala Ser Val Gln His
 245 250 255
 Ala Asp Ile Phe Ser Val Gly Leu Asn Cys Ser Phe Gly Ala Arg Gln
 260 265 270
 Leu Lys Pro Phe Leu Glu Gln Leu Ala Ala Arg Ala Pro Tyr Tyr Ile
 275 280 285
 Ser Ala Tyr Pro Asn Ala Gly Leu Pro Asn Ser Leu Gly Lys Tyr Asp
 290 295 300
 Gln Thr Pro Ala Asp Met Ala His Glu Val Lys Glu Tyr Val His Glu
 305 310 315 320
 Gly Leu Ile Asn Ile Ile Gly Gly Cys Cys Gly Thr Thr Asp Ala Tyr
 325 330 335
 Ile Ala Glu Tyr Pro Ala Leu Ile Ala Gly Ala Lys Pro His Ile Pro
 340 345 350
 Val Cys Lys Pro Asp Cys Met Trp Leu Ser Gly Leu Glu Leu Leu Glu
 355 360 365
 Val Lys Pro Glu Ile Asn Phe Val Asn Val Gly Glu Arg Cys Asn Val
 370 375 380
 Ala Gly Ser Arg Lys Phe Leu Arg Leu Ile Asn Glu Lys Lys Tyr Asp
 385 390 395 400
 Glu Ala Leu Ser Ile Ala Arg Lys Gln Val Glu Asp Gly Ala Leu Ile
 405 410 415
 Ile Asp Val Asn Met Asp Asp Gly Leu Leu Asp Ala Lys Glu Glu Met
 420 425 430
 Thr Thr Phe Leu Asn Leu Val Ala Ser Glu Pro Glu Ile Ala Arg Val
 435 440 445
 Pro Val Met Ile Asp Ser Ser Lys Trp Glu Val Ile Glu Ala Gly Leu
 450 455 460
 Lys Cys Leu Gln Gly Lys Ser Ile Val Asn Ser Ile Ser Leu Lys Glu
 465 470 475 480
 Gly Glu Glu Lys Phe Leu Glu His Ala Arg Thr Val Arg Gln Tyr Gly
 485 490 495
 Ala Ala Val Val Val Met Ala Phe Asp Glu Lys Gly Gln Ala Asp Thr
 500 505 510
 Ala Thr Arg Lys Ile Glu Val Cys Glu Arg Ala Tyr His Leu Leu Val
 515 520 525
 Asp Lys Ile Gly Phe Asn Pro His Asp Ile Ile Phe Asp Pro Asn Val
 530 535 540
 Leu Ala Val Ala Thr Gly Ile Glu Glu His Asn Asn Tyr Ala Val Asp

545 550 555 560
 Phe Ile Glu Ala Thr Ala Trp Ile Lys Lys Asn Leu Pro Gly Ala His
 565 570 575
 Ile Ser Gly Gly Val Ser Asn Leu Ser Phe Ser Phe Arg Gly Asn Asn
 580 585 590
 Tyr Ile Arg Glu Ala Met His Ala Val Phe Leu Tyr His Ala Ile Gln
 595 600 605
 Lys Gly Met Asp Met Gly Ile Val Asn Pro Gly Thr Ser Val Leu Tyr
 610 615 620
 Thr Asp Ile Pro Ala Asp Val Leu Glu Arg Ile Glu Asp Val Val Leu
 625 630 635 640
 Asn Arg Arg Ser Asp Ala Ala Glu Arg Leu Ile Glu Leu Ala Asp Arg
 645 650 655
 Leu Lys Glu Ala Ser Ala Gly Asn Thr Ser Ala Gly Gln Pro Val Lys
 660 665 670
 His Asp Ala Trp Arg Asp Gly Thr Val Glu Glu Arg Leu Gln Tyr Ala
 675 680 685
 Leu Val Lys Gly Ile Gly Asp Phe Leu Glu Glu Asp Leu Ala Glu Ala
 690 695 700
 Leu Pro Lys Tyr Asp Lys Ala Val Asp Val Ile Glu Gly Pro Leu Met
 705 710 715 720
 Asn Gly Met Asn His Val Gly Glu Leu Phe Gly Ala Gly Lys Met Phe
 725 730 735
 Leu Pro Gln Val Val Lys Thr Ala Arg Thr Met Lys Lys Ala Val Ala
 740 745 750
 Ile Leu Gln Pro Ile Ile Glu Ser Glu Lys Val Glu Gly Thr Ala Ser
 755 760 765
 Ala Gly Lys Val Leu Leu Ala Thr Val Lys Gly Asp Val His Asp Ile
 770 775 780
 Gly Lys Asn Ile Val Ser Val Val Met Ala Cys Asn Gly Tyr Asp Ile
 785 790 795 800
 Ile Asp Leu Gly Val Met Val Pro Ala Glu Ser Ile Val Gln Lys Ala
 805 810 815
 Ile Glu Glu Lys Val Asp Met Ile Gly Leu Ser Gly Leu Ile Thr Pro
 820 825 830
 Ser Leu Glu Glu Met Val His Val Ala Met Glu Leu Glu Lys Ala Gly
 835 840 845
 Leu Asp Ile Pro Leu Leu Ile Gly Gly Ala Thr Thr Ser Lys Leu His
 850 855 860
 Thr Ala Leu Lys Ile Ala Pro Val Tyr His Ala Pro Val Val His Leu
 865 870 875 880
 Lys Asp Ala Ser Gln Asn Ala Gly Val Ala Ala Arg Leu Met Ser Pro
 885 890 895
 Lys Ser Lys Glu Glu Leu Ala Lys Glu Leu Ser Gly Glu Tyr Glu Ala
 900 905 910
 Leu Arg Asp Lys Ser Gly Met Met Lys Arg Glu Thr Val Ser Leu Lys
 915 920 925
 Glu Ala Gln Glu Asn Arg Leu Lys Leu Phe
 930 935

<210> 5927

<211> 788

<212> PRT

<213> B.fragilis

<400> 5927

Ile Lys Trp Thr Ser Phe Ala Val Ile Ile Val Thr Phe Tyr Ala Thr
 1 5 10 15
 Lys Val His Phe Tyr Glu Glu Lys Lys Ser Lys Arg Arg Gln Lys Pro

			20				25				30				
Lys	Leu	Phe	Ile	Ile	Phe	Ala	Ala	Leu	Lys	His	Ser	Glu	Pro	Leu	Gln
		35					40					45			
Arg	Glu	Thr	Asn	Ser	Asp	Phe	Arg	Phe	Ser	Gln	Thr	Ser	Leu	Ile	His
	50					55					60				
His	Leu	Lys	Ile	Ile	Ala	Phe	Val	Lys	Phe	Pro	Thr	Ser	Ala	Ser	Gln
65					70					75					80
Leu	Gln	Pro	Tyr	Val	Phe	Gln	Arg	Ile	Lys	Leu	Lys	Tyr	Leu	Asn	Asn
			85						90					95	
Ser	Leu	Tyr	Cys	Met	Tyr	Asn	Ile	Ile	Gln	Leu	Asn	Asp	Lys	Asn	Leu
			100					105					110		
Ser	Glu	Leu	Gln	Ala	Ile	Ala	Gln	Glu	Leu	Gly	Ile	Lys	Lys	Thr	Asp
		115					120					125			
Ser	Leu	Lys	Lys	Glu	Glu	Leu	Val	Tyr	Lys	Ile	Leu	Asp	Glu	Gln	Ala
130						135						140			
Ile	Ala	Gly	Ala	Thr	Lys	Lys	Val	Ala	Ala	Asp	Lys	Leu	Lys	Glu	Glu
145					150					155					160
Arg	Lys	Glu	Asp	Lys	Lys	Lys	Arg	Ser	Arg	Val	Thr	Val	Lys	Lys	Glu
			165						170						175
Asn	Ala	Asp	Lys	Val	Phe	Ser	Ser	Thr	Lys	Asn	Gly	Glu	Leu	Thr	Lys
		180						185						190	
Thr	Asp	Ala	Lys	Thr	Pro	Ala	Ala	Lys	Thr	Gln	Pro	Gln	Pro	Lys	Thr
	195						200					205			
Thr	Glu	Pro	Thr	Pro	Glu	Thr	Ala	Lys	Glu	Ala	Asn	Ala	Glu	Thr	Asn
210					215						220				
Ala	Thr	Pro	Ala	Glu	Ser	Val	Lys	Val	Thr	Pro	Tyr	Ala	Thr	Pro	Lys
225					230					235					240
Lys	Lys	Pro	Gly	Arg	Pro	Arg	Lys	Asn	Gln	Val	Glu	Thr	Glu	Ala	Lys
			245					250						255	
Pro	Ala	Glu	Glu	Thr	Thr	Glu	Lys	Pro	Glu	Thr	Val	Pro	Ser	Ala	Gln
		260						265					270		
Glu	Glu	Lys	Pro	Ala	Ala	Gln	Pro	Glu	Thr	Glu	Lys	Arg	Pro	Ile	Ser
		275					280					285			
Lys	Pro	Ile	Leu	Lys	Pro	Lys	Pro	Ala	Val	Val	Asp	Glu	Glu	Ser	Ser
290						295					300				
Ile	Leu	Ser	Asp	Ile	Asp	Ala	Asp	Asp	Asp	Phe	Ile	Pro	Ile	Glu	Asp
305					310					315					320
Leu	Pro	Ser	Glu	Lys	Val	Glu	Leu	Pro	Thr	Glu	Leu	Phe	Gly	Lys	Phe
			325						330					335	
Glu	Ser	Thr	Lys	Ala	Glu	Ala	Ala	Thr	Ala	Pro	Glu	Pro	Val	Ala	Gln
		340						345					350		
Pro	Gln	Arg	Pro	Arg	Val	Ile	Arg	Pro	Arg	Asp	Asn	Asn	Asn	Asn	Asn
		355					360					365			
Asn	Tyr	Asn	Asn	Asn	Asn	Asn	Asn	Gln	Arg	Asn	Asn	Asn	Gln	Arg	Gln
370						375					380				
Pro	Val	Gln	Gln	Arg	Pro	Met	Pro	Gln	Gln	Asn	Ala	Ala	Glu	Ala	Ala
385					390					395					400
Pro	Val	Gln	Glu	Arg	Arg	Val	Ile	Glu	Arg	Glu	Lys	Pro	Tyr	Glu	Phe
			405						410					415	
Asp	Asp	Ile	Leu	Thr	Gly	Thr	Gly	Val	Leu	Glu	Ile	Met	Gln	Asp	Gly
		420					425						430		
Tyr	Gly	Phe	Leu	Arg	Ser	Ser	Asp	Tyr	Asn	Tyr	Leu	Ser	Ser	Pro	Asp
		435					440					445			
Asp	Ile	Tyr	Val	Ser	Gln	Ser	Gln	Ile	Lys	Leu	Phe	Gly	Leu	Lys	Thr
	450					455					460				
Gly	Asp	Val	Val	Glu	Gly	Val	Ile	Arg	Pro	Pro	Lys	Glu	Gly	Glu	Lys
465					470					475					480
Tyr	Phe	Pro	Leu	Val	Lys	Val	Ser	Lys	Ile	Asn	Gly	Arg	Asp	Ala	Ala
			485						490					495	

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Phe Val Arg Asp Arg Val Pro Phe Asp His Leu Thr Pro Leu Phe Pro
500 505 510
Asp Glu Lys Phe Lys Leu Cys Lys Gly Gly Tyr Ser Asp Ser Met Ser
515 520 525
Ala Arg Val Val Asp Leu Phe Ser Pro Ile Gly Lys Gly Gln Arg Ala
530 535 540
Leu Ile Val Ala Gln Pro Lys Thr Gly Lys Thr Ile Leu Met Lys Glu
545 550 555 560
Ile Ala Asn Ala Ile Ala Ala Asn His Pro Glu Val Tyr Met Ile Met
565 570 575
Leu Leu Ile Asp Glu Arg Pro Glu Glu Val Thr Asp Met Ala Arg Ser
580 585 590
Val Asn Ala Glu Val Ile Ala Ser Thr Phe Asp Glu Pro Ala Glu Arg
595 600 605
His Val Lys Ile Ala Gly Ile Val Leu Glu Lys Ala Lys Arg Leu Val
610 615 620
Glu Cys Gly His Asp Val Val Ile Phe Leu Asp Ser Ile Thr Arg Leu
625 630 635 640
Ala Arg Ala Tyr Asn Thr Val Ser Pro Ala Ser Gly Lys Val Leu Ser
645 650 655
Gly Gly Val Asp Ala Asn Ala Leu His Lys Pro Lys Arg Phe Phe Gly
660 665 670
Ala Ala Arg Asn Ile Glu Asn Gly Ser Leu Thr Ile Ile Ala Thr
675 680 685
Ala Leu Ile Asp Thr Gly Ser Lys Met Asp Glu Val Ile Phe Glu Glu
690 695 700
Phe Lys Gly Thr Gly Asn Met Glu Leu Gln Leu Asp Arg Asn Leu Ser
705 710 715 720
Asn Lys Arg Ile Phe Pro Ala Val Asn Ile Val Ala Ser Ser Thr Arg
725 730 735
Arg Asp Asp Leu Leu Leu Asp Lys Gln Thr Leu Asp Arg Met Trp Ile
740 745 750
Leu Arg Lys Tyr Leu Ser Asp Met Asn Pro Ile Glu Ala Met Asp Phe
755 760 765
Val Lys Asp Arg Leu Glu Lys Thr Lys Asp Asn Asp Glu Phe Leu Met
770 775 780
Ser Met Asn Ser
785

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<210> 5928

<211> 380

<212> PRT

<213> B.fragilis

<400> 5928

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Ser Asn Phe Ala Thr Pro Thr Gln Asp Leu Ala Asn Met Asn Lys Arg
1 5 10 15
Ile Phe Leu Val Ile Gly Val Ile Ile Leu Phe Ile Met Ile Ala Ile
20 25 30
Gly Ala Ser Thr Tyr Thr Ile Ile His Ser Leu Ile Gln Lys Glu Lys
35 40 45
Glu Ala Phe Lys Pro Gln Val Glu Asn Ile Leu Lys Glu Ala Val Ala
50 55 60
Asn Asn Thr Ile Gln Lys Cys Lys Asp Ile Pro Leu Asn Gly Phe Asn
65 70 75 80
Asn Ser Pro Asn Lys Ile Gly Thr Tyr Glu Thr Arg Thr Phe Cys Ser
85 90 95
Arg Asp Thr Leu Phe Thr Tyr Gln His Lys Ile Gln Asp Val Asp Ser
100 105 110

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Glu Ile Leu Phe Ala Arg Gln Leu Gly Leu Leu Met Met Asp Ser Leu
    115          120          125
Gln Ser Ser Asp Ile Gln Ala Leu Ile Ile Lys Asp Leu Asn Lys Asn
    130          135          140
Asp Ile Lys Gly Tyr Ile Asn Thr Gly Ile Ile Val Ser Lys His Leu
145          150          155          160
Gln Arg Glu Ile Trp Ser Gln Pro Ser Asn Ser Ile Pro Arg Asn Ala
    165          170          175
Glu Met Ile Thr Tyr Arg Leu Glu Asn Glu Ile Val Ser Val Asp Tyr
    180          185          190
Ile Met Tyr Ile Asp Tyr Ser Phe Ser Thr Leu Trp Lys Arg Met Pro
    195          200          205
Lys Thr Asn Ile Tyr Ile Asn Leu Val Val Glu Val Ile Leu Ile Tyr
    210          215          220
Thr Ile Thr Leu Phe Val Leu Tyr Tyr Arg Lys Gln Gln Lys Asn Arg
225          230          235          240
Ser Val Ser Thr Val Asp Ile Thr Ser Asp Pro Asn Ile Ile Thr Asp
    245          250          255
Pro Ile Ser Val Asp Asn Thr Val Glu Thr Glu Lys Arg Thr Asn Ser
    260          265          270
Thr Ile Lys Glu Glu Leu Ser Phe Lys Asp Gln Phe Val Phe Glu Lys
    275          280          285
Asp Phe Val Leu Phe Asn Asp Arg Pro Ile Lys Met Pro Asn Gln Gln
    290          295          300
Gln Lys Ile Leu Leu Phe Phe Leu Asn Arg Pro Asn Tyr Arg Val Asn
305          310          315          320
Lys His Glu Leu Lys Glu Glu Phe Trp Pro Lys Asn Ser Asp Pro Thr
    325          330          335
Asn Asn Met Thr Ser Ala Ile Asn Lys Leu Lys Lys Ile Leu Glu Glu
    340          345          350
Ile Asn Ser Lys Tyr Thr Ile Ile Thr Asp Lys Thr Asn Glu Glu Tyr
    355          360          365
Tyr Val Leu Ile Arg Asp Lys Ser Ala Glu Lys Ile
    370          375          380

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<210> 5929

<211> 133

<212> PRT

<213> B.fragilis

<400> 5929

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Met Glu Ile Leu Phe Pro Glu Leu Leu Tyr Ser Ile Ile Val Leu Asn
1      5      10      15
Lys Arg Leu Arg Tyr Ser Tyr Leu Asn Ile Ile Met Leu Thr Phe Thr
    20      25      30
Asp Asn Phe Glu Asn Asp Lys Glu Leu Ile Leu Arg Asp His Leu Ala
    35      40      45
Leu Glu Arg Thr Lys Leu Ala Asn Glu Arg Thr Leu Phe Ala Tyr Ile
    50      55      60
Arg Met Ala Leu Tyr Leu Leu Thr Val Gly Ile Gly Ile Phe Gln Ile
65      70      75      80
Glu Ser Ile Ser Arg Leu Asp Gly Leu Ala Trp Gly Cys Ile Ile Ala
    85      90      95
Gly Ile Phe Leu Phe Phe Leu Gly Phe Val Arg Phe Glu Gln Met Arg
    100     105     110
Lys His Leu Lys Gln Tyr Thr Lys Thr Cys Arg Asp Thr Glu Asn Glu
    115     120     125
Ser Ser Arg Lys Lys
    130

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<210> 5930
 <211> 642
 <212> PRT
 <213> B.fragilis

<400> 5930

Lys	Met	Asn	Tyr	Gly	Phe	Val	Lys	Val	Ala	Ala	Ala	Val	Pro	Arg	Val
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Lys	Val	Ala	Asp	Cys	Lys	Phe	Asn	Ser	Glu	Arg	Leu	Glu	Gly	Leu	Ile
		20						25					30		
Thr	Ile	Ala	Glu	Gly	Lys	Gly	Val	Gln	Ile	Leu	Thr	Phe	Pro	Glu	Met
		35					40					45			
Cys	Ile	Thr	Gly	Tyr	Thr	Cys	Gly	Asp	Leu	Phe	Ala	Gln	Gln	Leu	Leu
	50					55				60					
Leu	Glu	Gln	Ala	Glu	Met	Ala	Leu	Ile	Gln	Ile	Leu	Asn	Ser	Thr	Arg
65					70					75					80
Gln	Leu	Asp	Ile	Ile	Ser	Ile	Leu	Gly	Met	Pro	Val	Val	Val	Asn	Ser
			85						90					95	
Thr	Val	Ile	Asn	Ala	Ala	Val	Val	Ile	Gln	Lys	Gly	Lys	Ile	Leu	Gly
			100						105					110	
Val	Val	Pro	Lys	Thr	Tyr	Leu	Pro	Asn	Tyr	Lys	Glu	Phe	Tyr	Glu	Gln
			115					120					125		
Arg	Trp	Phe	Thr	Ser	Ala	Leu	Gln	Val	Ser	Glu	Asn	Ser	Val	Arg	Leu
	130					135						140			
Cys	Gly	Gln	Ile	Val	Pro	Met	Gly	Asn	Asn	Leu	Leu	Phe	Glu	Thr	Ala
145						150					155				160
Glu	Thr	Thr	Phe	Gly	Ile	Glu	Ile	Cys	Glu	Asp	Leu	Trp	Ala	Thr	Val
			165						170					175	
Pro	Pro	Ser	Ser	Ser	Leu	Ala	Leu	Gln	Gly	Ala	Glu	Ile	Ile	Phe	Asn
			180					185						190	
Leu	Ser	Ala	Asp	Asp	Glu	Gly	Ile	Gly	Lys	His	Asn	Tyr	Leu	Cys	Ser
		195					200					205			
Leu	Ile	Ser	Gln	Gln	Ser	Ala	Arg	Cys	Ile	Ser	Gly	Tyr	Val	Phe	Ser
	210					215					220				
Ser	Ser	Gly	Phe	Gly	Glu	Ser	Thr	Thr	Asp	Val	Val	Phe	Ala	Gly	Asn
225					230					235					240
Gly	Leu	Ile	Tyr	Glu	Asn	Gly	Tyr	Leu	Leu	Ala	Arg	Ser	Glu	Arg	Phe
			245						250					255	
Cys	Met	Glu	Glu	Gln	Leu	Ile	Ile	Asn	Glu	Ile	Asp	Val	Glu	Cys	Ile
			260					265					270		
Arg	Ala	Glu	Arg	Arg	Val	Asn	Thr	Thr	Phe	Ala	Ala	Asn	Lys	Ala	Asn
		275					280					285			
Cys	Pro	Gly	Lys	Glu	Ala	Val	Arg	Ile	Ser	Thr	Glu	Phe	Val	Asn	Ser
	290					295					300				
Lys	Asp	Leu	Asn	Leu	Thr	Arg	Thr	Phe	Asn	Pro	His	Pro	Phe	Val	Pro
305					310					315					320
Gln	Gly	Asn	Glu	Leu	Asn	Ser	Arg	Cys	Glu	Glu	Ile	Phe	Ser	Ile	Gln
			325						330					335	
Ile	Ala	Gly	Leu	Ala	Gln	Arg	Leu	Leu	His	Thr	Gly	Ala	Lys	Thr	Ala
		340						345					350		
Val	Ile	Gly	Ile	Ser	Gly	Gly	Leu	Asp	Ser	Thr	Leu	Ala	Leu	Leu	Val
	355						360					365			
Cys	Val	Lys	Thr	Phe	Asp	Lys	Leu	Gly	Leu	Ser	Arg	Lys	Asp	Ile	Leu
	370					375					380				
Gly	Ile	Thr	Met	Pro	Gly	Phe	Gly	Thr	Thr	Asp	Arg	Thr	Tyr	His	Asn
385					390					395					400
Ala	Ile	Asp	Leu	Met	Asn	Ser	Leu	Gly	Val	Ser	Ile	Arg	Glu	Ile	Ser
			405						410					415	

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Ile Arg Glu Ala Cys Ile Gln His Phe Lys Asp Ile Gly His Asp Leu
      420      425      430
Asn Ile His Asp Val Thr Tyr Glu Asn Ser Gln Ala Arg Glu Arg Thr
      435      440      445
Gln Ile Leu Met Asp Ile Ala Asn Gln Thr Trp Gly Met Val Ile Gly
      450      455      460
Thr Gly Asp Leu Ser Glu Leu Ala Leu Gly Trp Ala Thr Tyr Asn Gly
465      470      475      480
Asp His Met Ser Met Tyr Gly Val Asn Ala Gly Ile Pro Lys Thr Leu
      485      490      495
Val Lys His Leu Val Gln Trp Val Ala Glu Asn Gly Met Asp Glu Thr
      500      505      510
Ser Lys Ala Thr Leu Leu Asp Ile Val Asp Thr Pro Ile Ser Pro Glu
      515      520      525
Leu Ile Pro Ala Asp Glu Asn Gly Glu Ile Lys Gln Lys Thr Glu Asp
      530      535      540
Leu Val Gly Pro Tyr Glu Leu His Asp Phe Phe Leu Tyr Tyr Phe Leu
545      550      555      560
Arg Phe Gly Phe Arg Pro Ser Lys Ile Tyr Phe Leu Ala Gln Thr Ala
      565      570      575
Phe Ser Gly Val Tyr Asp Asp Glu Thr Ile Lys Lys Trp Leu Gln Thr
      580      585      590
Phe Phe Arg Arg Phe Phe Asn Gln Phe Lys Arg Ser Cys Leu Pro
      595      600      605
Asp Gly Pro Lys Val Gly Ser Ile Ser Ile Ser Pro Arg Gly Asp Trp
      610      615      620
Arg Met Pro Ser Asp Ala Ser Ser Ala Ala Trp Leu Lys Glu Ile Ala
625      630      635      640
Glu Leu

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<210> 5931

<211> 289

<212> PRT

<213> B.fragilis

<400> 5931

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Pro Tyr Ile His Pro Pro Val Ile Arg Lys Arg Asp Leu Cys Val Thr
1      5      10      15
Lys Lys Thr Lys Val Met His Leu Arg Thr Tyr Tyr Pro Thr Val Val
      20      25      30
Leu Ser Asp Ile His Leu Gly Thr Gln His Ser Lys Thr Glu Glu Val
      35      40      45
Thr His Phe Leu Lys Ser Ile Asn Cys Asp Arg Leu Ile Leu Asn Gly
      50      55      60
Asp Ile Ile Asp Gly Trp His Leu Gln Lys Ser Gly Leu Gly Lys Trp
65      70      75      80
Lys Ala Lys His Thr Asp Phe Phe Lys Val Ile Met Lys Met Met Glu
      85      90      95
Asn Phe Gly Thr Gln Val Ile Tyr Val Arg Gly Asn His Asp Asp Phe
      100      105      110
Leu Asp Asn Leu Ala Pro Leu Asn Phe Tyr Asn Ile Arg Ile Val Lys
      115      120      125
Asp Cys Ile Tyr Glu Ser His Gly Arg Arg Tyr Tyr Val Thr His Gly
      130      135      140
Asp Ile Phe Asp Thr Val Thr Thr Gln Met Lys Trp Leu Ala Lys Leu
145      150      155      160
Gly Asp Thr Gly Tyr Thr Phe Leu Leu Trp Leu Asn Lys Val Tyr Asn
      165      170      175

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Leu Arg Arg Met Lys Gln Gly Lys Pro Tyr Tyr Ser Leu Ser Gln Ser
 180 185 190
 Ile Lys Asn Arg Val Lys Thr Ala Val Ser Tyr Ile Ser Asp Phe Glu
 195 200 205
 Lys Glu Leu Val Gly Leu Ala Arg Ala Lys Lys Cys Asp Gly Val Ile
 210 215 220
 Cys Gly His Ile His His Pro Ala Asn Thr Phe Tyr Glu Asp Ile His
 225 230 235 240
 Tyr Leu Asn Ser Gly Asp Trp Val Glu Thr Leu Ser Ala Leu Thr Glu
 245 250 255
 Asp Glu Asp Gly Asn Trp Thr Ile Arg Tyr Phe Asp Ser Gly Leu Leu
 260 265 270
 Lys Glu Asp Asn His Lys Glu Lys Gln Thr Ile Ser Ile Thr Ile Ala
 275 280 285
 Ser

<210> 5932
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 5932
 His Cys Asp Leu Cys Ser Thr Ile Leu Lys Arg Gly Lys Val Met Lys
 1 5 10 15
 Arg His Leu Ile Leu Val Phe Ala Leu Leu Ala Ser Ser Val Ala Leu
 20 25 30
 Asn Ala Val Asn Ser Leu Pro Asp Asp Asp Lys Ser Asp Asn Lys Asn
 35 40 45
 Lys Thr Glu Leu Asn Ser Val Val Lys Lys Thr Trp Glu Phe Tyr Ser
 50 55 60
 Thr Ile Lys Gln Pro Ser Ala Asp Ala Leu Ala Asn Ala Gly Asn Tyr
 65 70 75 80
 Lys Phe Gly Gln Glu Ala Gly Tyr Leu Tyr Asn Gln Phe Met Lys Ile
 85 90 95
 Tyr Val Val Arg Glu Glu Val Val Pro Gly Asp Pro Thr Arg Arg Thr
 100 105 110
 Val Ile Arg Lys Pro Thr Ile Tyr Asn Ala Val Arg Ser Ile Glu Lys
 115 120 125
 Gln Leu Asn Lys Glu Leu Lys Ser Asn Gln Met Thr Arg Glu Gln Val
 130 135 140
 Ala Ala Glu Phe Thr Asn Val Leu Lys Val Ala Ile Ser Ala Tyr Asp
 145 150 155 160
 Ser Glu Ser Glu Ser Phe Glu Asp Ala Leu Gln Ile Asn Arg Lys Asn
 165 170 175
 Ala Thr Asp Leu Leu Ser Val Phe Gln Asn Val Lys Leu Thr Glu Ile
 180 185 190

<210> 5933
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 5933
 Lys Thr Tyr Gln Lys Ala Phe Leu Asn His Ile Phe Pro Tyr Phe Cys
 1 5 10 15
 Phe Leu Ile Phe Ile Asn Ile Glu Phe Thr Leu Leu Tyr Ile Val Glu
 20 25 30
 Met Ile Glu Val Thr Asp Ala Ser Leu Gln Lys Ala Ala Gly Glu Gly

35	40	45
Met Asp Glu Phe Ile Gln Val Phe Thr Asp Lys Tyr Lys Glu Val Ile		
50	55	60
Gly Gly Glu Leu Thr Ala Glu Thr Met Pro Leu Leu Thr Gly Glu Gln		
65	70	75
His Ser Leu Leu Ala Tyr Gln Ile Phe Arg Asp Glu Val Met Phe Gly		
85	90	95
Gly Phe Cys Gln Leu Ile Gln Asn Gly Tyr Gly Gly Tyr Ile Phe Asp		
100	105	110
Asn Pro Phe Ala Lys Val Met Arg Leu Trp Gly Ala Glu Asp Phe Ser		
115	120	125
Lys Leu Val Tyr Lys Ala Lys Lys Ile Tyr Asp Ala His Arg His Asp		
130	135	140
Leu Glu Lys Glu Arg Thr Glu Asp Glu Phe Met Ala Met Tyr Glu Gln		
145	150	155
Tyr Glu Ala Phe Asp Asp Leu Glu Glu Glu Tyr Leu Asp Ile Glu Glu		
165	170	175
Glu Val Thr Ala Leu Val Ala Ser Tyr Val Asp Asp His Leu Glu Leu		
180	185	190
Phe Ala Lys Ile Val Lys		
195		

<210> 5934

<211> 676

<212> PRT

<213> B.fragilis

<400> 5934

Pro Gly Leu His Arg Arg Cys Ala Ile Pro Val Tyr Thr Pro Arg Pro		
1	5	10
Ala Arg Lys Gly Lys Gly Gly Arg Lys Met Lys Arg Leu Ile Leu Ile		
20	25	30
Ile Ile Val Cys Cys Arg Ala Leu Gly Trp Cys His Ala Asn Thr Gln		
35	40	45
Thr Glu Thr Asp Ser Leu Tyr Arg Val Thr Gln Ser Leu Pro His Asp		
50	55	60
Ser Thr Arg Leu Glu Met Phe Lys Arg Leu Ala Gln Ile Glu Gln Leu		
65	70	75
Thr Pro Lys Cys Ile Thr Phe Ser Gly Leu Leu Arg Glu Glu Ala Thr		
85	90	95
Leu Gln Lys Asn Asp Arg Tyr Asn Ala Ile Ala Ala Tyr Leu His Thr		
100	105	110
Val Tyr Tyr Tyr Asn Gln Asn Asn Arg Asp Ser Val Lys Lys Trp Leu		
115	120	125
Asp Thr Met Glu Pro Tyr Ala Arg Lys Ser Gln Thr Trp Asp Leu Tyr		
130	135	140
Phe Asp Ala Leu Arg Phe Gln Ile Asp Leu Cys Thr Tyr Glu Glu Gln		
145	150	155
Tyr Glu Leu Ala Ile Asn Glu Ala Asn Gln Met Tyr Glu Arg Ala Gln		
165	170	175
Lys Val Asn Cys Ala Arg Gly Leu Ile Gly Ala Lys Gln Cys Leu Gly		
180	185	190
Asn Ala Tyr Ile Ser Thr Glu Arg Trp Asp Glu Gly Met Lys Ala Leu		
195	200	205
Glu Ala Ala Tyr Gln Leu Ser Gln Thr Asp Asn Ala Val Val Arg		
210	215	220
Ile Ser Ile Leu Cys Gln Leu Ile Ser Ile Thr Lys Asp Gln Lys Asn		
225	230	235
Asn Gln Leu Leu Ser Glu Tyr Leu Ala Lys Leu Lys Glu Thr Leu His		

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<210> 5935
<211> 252
<212> PRT
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<213> B.fragilis

<400> 5935

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Ser Gly Trp Gln Pro Asp Thr Leu Ser Ser Val Asp Glu Lys Gly Glu
1      5      10      15
Val Lys Tyr His Lys Pro Asp Cys Ala Val Lys Gly Ser Met Asp Leu
      20      25      30
Asn Arg Lys Phe Leu Leu Arg Gln Tyr Leu Lys Asp Tyr Leu Ser Ala
      35      40      45
Val Val Gly Asp Lys Ile Glu Gly Ala Asn His Ser Asp Phe Ser Asp
      50      55      60
Ala Cys Leu Leu His Gln Ile Val Asp Thr Pro Lys Val Ser Tyr Gln
      65      70      75      80
Val Ala Tyr Pro Gln Ser Arg Lys Arg Tyr Arg Tyr Ile Arg Tyr Thr
      85      90      95
Ser Thr Pro Glu Lys Thr Leu Gln Leu Ala Glu Leu Gln Leu Phe Arg
      100     105     110
Lys Val Asp Asp Gln Glu Lys Ile Thr Ala Lys Val Ile Asp Gly Ser
      115     120     125
Asn Ala Phe Ile Ala Asp Asp Arg Phe Asp Arg Phe Lys Val Asn Asp
      130     135     140
Gly Asp Gly Leu Thr Phe Phe Leu Thr Lys Glu Lys Gly Ala Phe Val
      145     150     155     160
Thr Leu Asp Leu Gly Lys Pro Glu Lys Ile Glu Lys Ile Val Tyr Met
      165     170     175
Pro Arg Asn Asp Asp Asn Phe Ile Arg Leu Gly Asp Gln Tyr Glu Leu
      180     185     190
Phe Tyr Gln Asp Gly Phe Arg Gly Trp Ile Ser Leu Gly Arg Gln Val
      195     200     205
Ala Ser Glu Leu Thr Leu His Tyr Asp Asn Ile Pro Gln Asn Ser Val
      210     215     220
Leu Trp Leu Arg Asn Leu Ser Arg Gly Arg Glu Glu Thr Val Phe Arg
      225     230     235     240
Asn Glu Asp Gly Arg Gln Val Phe Phe Val Lys Trp
      245     250

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<210> 5936

<211> 315

<212> PRT

<213> B.fragilis

<400> 5936

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Lys Arg Ile Lys Met Glu Ile His Ser Glu Arg Lys Lys Arg Leu Ser
1      5      10      15
Leu Ser Leu Leu Phe Lys Ile Ile Lys Asp Thr Val Trp Gly Phe Ile
      20      25      30
Asp Asp Ser Val Met Arg Leu Ser Ala Ser Leu Ala Tyr Ala Thr Leu
      35      40      45
Phe Ser Ile Ile Pro Phe Leu Ser Leu Leu Val Thr Val Gly Val Phe
      50      55      60
Phe His Met Asp Leu Ala Asn Gln Leu Tyr Val Gln Leu Gln Pro Ile
      65      70      75      80
Val Gly Pro Glu Val Thr Glu Ala Leu Arg Ser Ile Ile Glu Asn Ala
      85      90      95
Glu Asn Thr Asp Ser Ser Arg Ser Ala Ala Phe Val Ser Leu Gly Ile
      100     105     110
Ser Ile Phe Gly Ala Thr Thr Ile Phe Ala Glu Ile Gln Ser Ser Leu
      115     120     125
Asn Ser Ile Trp Gly Ile Lys Ala Val Pro Lys Lys Ser Trp Leu Lys

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130		135		140
Phe Ile Lys Asn Arg Ile Leu Ser Phe Ser Ile Ile Leu Val Phe Ala				
145		150		155
Phe Ile Leu Leu Ile Thr Phe Thr Ile Thr Asn Ile Ile Gly Glu Leu				160
	165		170	175
Ser Gln Lys Phe Ile Phe Lys Tyr Pro Glu Ala Ala Asp Ser Leu Val				
	180		185	190
Lys Val Val Gly Ile Ile Ile Asn Met Ser Val Thr Thr Ile Ile Phe				
	195		200	205
Thr Leu Ile Phe Lys Ile Leu Pro Asp Ala Lys Ile Lys Ser Lys Asp				
	210		215	220
Val Cys Ile Gly Ala Val Val Thr Thr Ile Leu Leu Leu Ile Gly Gln				
225		230		235
Trp Gly Ile Ser Phe Tyr Ile Gly Ile Ala Asn Val Gly Thr Val Tyr				240
	245		250	255
Gly Ala Ala Ala Phe Met Val Val Phe Val Thr Trp Ile Tyr Tyr Ser				
	260		265	270
Ser Ile Ile Ile Tyr Thr Gly Ala Glu Phe Thr Lys Ala Trp Ala Asn				
	275		280	285
Glu Met Gly Ser Lys Ile Phe Pro Asp Glu Tyr Ala Val Ala Thr Lys				
	290		295	300
Thr Ile Glu Ile His Glu Asp Lys Pro Ile Glu				
305		310		315

<210> 5937

<211> 63

<212> PRT

<213> B.fragilis

<400> 5937

Lys Thr Ser Asn Ile His Tyr Leu Ser Leu Leu Lys Tyr Leu Ala Leu				
1		5		10
Asp Tyr Lys Pro Arg Gln Ser Pro Ala Asp Ile Leu Ala Leu Val Met				
	20		25	30
Thr Thr Tyr His Pro His Ser Leu Leu Pro Lys Leu Leu Ser Pro Ile				
	35		40	45
Gly Leu Leu Lys Asp Pro Phe Val Leu Ser Leu Arg Met Ile Leu				
	50		55	60

<210> 5938

<211> 726

<212> PRT

<213> B.fragilis

<400> 5938

Phe Phe Tyr Lys Leu Met Asn Arg Leu Lys Leu Tyr Leu Leu Ala Leu				
1		5		10
Thr Ala Leu Ala Val Cys Ser Ala Lys Ala Asp Glu Gly Met Trp Leu				
	20		25	30
Leu Gln Leu Met Gln Gln Gln His Ser Ile Asp Met Met Lys Lys Gln				
	35		40	45
Gly Leu Lys Leu Glu Ala Gln Asp Leu Tyr Asn Pro Asn Gly Val Ser				
	50		55	60
Leu Lys Asp Ala Val Gly Ile Phe Gly Gly Gly Cys Thr Gly Glu Ile				
65		70		75
Ile Ser Pro Glu Gly Leu Ile Leu Thr Asn His His Cys Gly Tyr Ala				
	85		90	95
Ser Ile Gln Gln His Ser Ser Val Glu His Asp Tyr Leu Thr Asp Gly				
	100		105	110

260	265	270
Thr Phe Ile Arg Asp Cys Phe Val Thr Asp Lys Tyr Ile Tyr Leu Leu		
275	280	285
Cys Pro Glu Gly Glu Gln Ser Ser Leu Val Ile Val Asp Trp Asp Gly		
290	295	300
Arg Pro Ile Ala Arg Tyr Arg Leu Asp Glu Lys Ile Phe Phe Phe Phe		
305	310	315
Ile Asp Pro Asp Arg Asn Leu Phe Cys Gly Ile Asn Ser Asn Asn Gly		
325	330	335
Gln Ser Phe Tyr Phe Leu Asp Leu Asp Ile Asn		
340	345	

<210> 5940

<211> 265

<212> PRT

<213> B.fragilis

<400> 5940

Ile Leu Ile Lys Cys Phe Ile Cys Ile Arg Ile Arg Cys Thr Phe Val	
1 5 10 15	
Val Glu Lys Val Val Tyr Pro Met Asn Lys Val Leu Pro Phe Leu Leu	
20 25 30	
Leu Leu Phe Val Phe Thr Ser Cys Ser Arg Lys Tyr Lys Ile Glu Gly	
35 40 45	
Ala Ser Ser Val Thr Ser Leu Asp Gly Lys Met Leu Phe Ile Lys Val	
50 55 60	
Leu Gln Asn Gly Glu Trp Leu Asn Ile Asp Ser Ala Glu Val Val His	
65 70 75 80	
Gly Leu Phe Ser Met Lys Gly Lys Val Asp Ser Val Val Met Ala Thr	
85 90 95	
Leu Tyr Ile Gly Asp Glu Ser Ile Met Pro Leu Val Ile Glu Lys Gly	
100 105 110	
Asn Ile Gln Val Ser Ile Thr Asn Thr Glu Leu Val Ala Lys Gly Thr	
115 120 125	
Ala Leu Asn Asn Ala Leu Tyr Ala Phe Ile Asp Lys Lys Asn Ser Leu	
130 135 140	
Asp Val Gln Ile Glu Glu Leu Gln Arg Lys Glu Ala Arg Met Val Met	
145 150 155 160	
Asp Gly Ala Asp Leu Ala Asp Ile His Glu Gln Leu Thr His Glu Gly	
165 170 175	
Asp Ser Leu Met Gln Asp Met Asn Gly Phe Ile Lys Lys Phe Ile Ser	
180 185 190	
Asp Asn Tyr Glu Thr Val Leu Gly Pro Ser Val Phe Met Met Leu Cys	
195 200 205	
Ser Thr Leu Pro Tyr Pro Val Met Thr Pro Gln Ile Glu Asp Ile Met	
210 215 220	
Lys Asp Ala Pro Tyr Ser Phe Lys Asn Asn Lys Leu Val Lys Asp Phe	
225 230 235 240	
Ile Thr Lys Ala Lys Ser Asn Met Glu Leu Ile Glu Glu His Gln Arg	
245 250 255	
Met Glu Gln Asn Ala Thr Leu Asn His	
260 265	

<210> 5941

<211> 385

<212> PRT

<213> B.fragilis

<400> 5941

Gly Lys Thr Asn Tyr Ile His Asn Asn Ser Ile Met Lys Phe Leu Phe
 1 5 10 15
 Ile Val Gln Gly Glu Gly Arg Gly His Phe Thr Gln Ala Ile Thr Leu
 20 25 30
 Glu Asp Met Leu Leu Arg Asn Gly His Gln Val Val Glu Val Leu Val
 35 40 45
 Gly Lys Ser Ser Ser Arg Thr Leu Pro Gly Phe Phe Asn Arg Ser Ile
 50 55 60
 Gln Ala Pro Val Lys Arg Phe Thr Ser Pro Asn Phe Leu Pro Thr Ala
 65 70 75 80
 Glu Asn Lys Arg Ala Asp Leu Lys Lys Ser Phe Ala Tyr Asn Leu Ile
 85 90 95
 His Val Pro Glu Tyr Phe Arg Ser Met Cys Tyr Ile Asn Gln Arg Ile
 100 105 110
 Lys Glu Thr Gly Ala Glu Val Val Ile Asn Phe Tyr Glu Leu Leu Thr
 115 120 125
 Gly Leu Thr Tyr Ala Leu Phe Arg Pro Ser Val Pro Tyr Val Cys Ile
 130 135 140
 Gly His Gln Tyr Leu Phe Leu His Asn His Phe Glu Phe Pro Arg Lys
 145 150 155 160
 Ser Val Ile Gln Leu Ser Met Leu Arg Phe Phe Thr Arg Met Thr Ser
 165 170 175
 Leu Arg Ala Ser Arg Arg Leu Ala Leu Ser Phe Arg Lys Met Glu Ser
 180 185 190
 Asp Arg Thr Glu Arg Ile Ser Val Val Pro Pro Leu Leu Arg Arg Glu
 195 200 205
 Val Thr Ala Met Gln Ser Ala Gln Gly Asn Tyr Ile His Gly Tyr Met
 210 215 220
 Val Asn Ser Gly Phe Ala Asp Ser Val Glu Ala Phe His Ala Leu His
 225 230 235 240
 Pro Glu Ile Pro Met His Phe Phe Trp Asp Lys Gln Asp Ala Asp Glu
 245 250 255
 Val Thr Lys Val Asp Ala Thr Leu Ser Phe His Gln Ile Asp Asp Val
 260 265 270
 Lys Phe Leu Asn Arg Met Ala Gly Cys Arg Ala Tyr Ala Ser Thr Ala
 275 280 285
 Gly Phe Glu Ser Ile Cys Glu Ala Met Tyr Leu Gly Lys Pro Val Leu
 290 295 300
 Met Val Pro Ala His Ile Glu Gln Asp Cys Asn Ala Tyr Asp Ala Arg
 305 310 315 320
 Gln Ala Gly Ala Gly Ile Ile Gly Glu Ser Phe Asp Leu Glu Ser Leu
 325 330 335
 Leu Arg Phe Ala Gly Thr Tyr Val Pro Asn Arg Glu Phe Ile Arg Trp
 340 345 350
 Val Arg Ser Cys Glu Arg Gln Ile Ile Gly Glu Leu Glu Arg Leu Ala
 355 360 365
 Asp Gln His Ser Ala Val Thr Val Pro Thr Leu Thr Asn Tyr Phe Pro
 370 375 380
 Ile
 385

<210> 5942

<211> 93

<212> PRT

<213> B.fragilis

<400> 5942

Ser Gly Lys Asn Arg Lys Glu Thr Asp Gln Lys Lys Arg Asn Phe Phe
 1 5 10 15

Tyr Leu Phe Cys Lys Ile Asp Cys Lys Ser Leu Asn Gly Leu Ile Leu
 20 25 30
 Leu Phe Phe Asp Arg Ile Leu Ala Ser Leu Ile Leu Phe Phe Leu Lys
 35 40 45
 Leu Cys Lys Val Asn Gln Cys Arg Lys Tyr Asp Tyr Asn Glu Val Glu
 50 55 60
 Thr Gly Ser Ser Trp Asp Asp Val Ala Asn Leu Gly Asn Tyr Asp Val
 65 70 75 80
 Gly His His Ile Leu Ser Asn Ser Arg Arg Glu Met Ser
 85 90

<210> 5943

<211> 290

<212> PRT

<213> B.fragilis

<400> 5943

Ile Phe Met Lys Tyr Leu Tyr Val Leu Leu Ala Phe Ser Phe Leu Phe
 1 5 10 15
 Ser Cys Lys Asp Glu Asn Lys Lys His Ala Glu Ser Val Leu Arg Glu
 20 25 30
 Trp Met Asn Lys Glu Ile Val Phe Pro Asn Lys Met Tyr Phe Ser Ile
 35 40 45
 Gln Gly Lys Glu Asn Val Asp Phe Arg Ile Lys Asp Thr Glu Tyr Lys
 50 55 60
 Ile Val Ala Tyr Val Asp Ser Ala Gly Cys Thr Ser Cys Lys Leu His
 65 70 75 80
 Leu Ser Lys Trp Lys Glu Leu Ile His Tyr Val Asp Ser Ile Gln Ser
 85 90 95
 Glu Arg Val Gln Phe Leu Phe Phe Phe Phe Pro Lys Asn Gly Arg Asp
 100 105 110
 Ile Tyr His Thr Met Arg Met Asp Lys Phe Thr Tyr Pro Val Cys Val
 115 120 125
 Asp Thr Leu Asp Ser Phe Asn Lys Leu Asn His Phe Pro Asp Asp Val
 130 135 140
 Arg Phe Gln Thr Phe Leu Asn Lys Glu Asn Lys Val Val Ala Val
 145 150 155 160
 Gly Asn Pro Ile His Asn Pro Asn Ile Arg Asp Leu Phe Leu Asn Ile
 165 170 175
 Ile Ser Gly Gly Thr Ser Leu Pro Asp Glu Lys Arg Pro Gln Thr Glu
 180 185 190
 Val Lys Ile Glu Ala Leu Ser Met Asp Leu Gly Met Phe Asp Trp Lys
 195 200 205
 Lys Glu Gln Lys Cys Ile Phe Thr Val Glu Asn Thr Gly Lys Glu Leu
 210 215 220
 Leu Val Ile Asp Asp Val Asn Thr Ser Cys Gly Cys Thr Thr Val Glu
 225 230 235 240
 Tyr Ser Arg Glu Pro Val Gln Ser Gly Lys Thr Ile Asp Ile Thr Val
 245 250 255
 Val Tyr Lys Ala Glu Tyr Pro Glu His Phe Asn Lys Thr Ile Thr Val
 260 265 270
 Tyr Cys Asn Ser Pro Val Ser Pro Leu Gln Leu Lys Ile Lys Gly Asp
 275 280 285
 Ala Lys
 290

<210> 5944

<211> 136

<212> PRT

<213> B.fragilis

<400> 5944

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Ser Val Met Asn Leu Asn Glu Val Asp Ile His Tyr Leu Ile Ala Ala
1          5          10          15
Ile Ser Val Ile Thr Ser Ala Leu Val Phe Tyr Thr Ile Gly Val Trp
          20          25          30
Gly Glu Arg Leu Gln Lys Arg Leu Lys Phe Trp His Leu Val Phe Phe
          35          40          45
Leu Leu Gly Leu Leu Ala Asp Ser Val Gly Thr Ala Leu Met Glu Asn
          50          55          60
Ile Ala Arg Leu Thr His Leu His Asp Glu Ile His Thr Val Thr Gly
65          70          75          80
Ile Ile Ala Ile Leu Leu Met Phe Ile His Ala Met Trp Ala Ile Trp
          85          90          95
Thr Tyr Val Lys Gly Ser Glu Arg Ala Lys Glu His Phe Asn Arg Phe
          100          105          110
Ser Ile Val Val Trp Cys Ile Trp Leu Ile Pro Tyr Cys Ile Gly Val
          115          120          125
Tyr Leu Gly Met Ser Leu His His
          130          135

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<210> 5945

<211> 355

<212> PRT

<213> B.fragilis

<400> 5945

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Asn Leu Met Lys Tyr Cys Leu Thr Phe Leu Phe Leu Leu Val Ile Phe
1          5          10          15
Thr Gly Cys Thr Ser Asp Leu Pro Lys Asp Arg Met Leu Tyr Ala Ser
          20          25          30
Phe Pro Lys Glu Glu Thr Leu His Ser Lys Val Ile Gln Leu Asp Ser
          35          40          45
Val Tyr Met Arg Tyr Pro Phe Arg Val His Val Ser Gly Asp Gln Ala
          50          55          60
Val Val Leu Asp Leu His Gly Thr Asp Val Tyr Cys His Leu Phe His
65          70          75          80
Tyr Pro Asp Phe His Tyr Leu Ser Ser Phe Gly Arg Arg Gly Asp Ser
          85          90          95
Pro Glu Glu Met Leu Ser Val Glu Thr Val Lys Cys Ile Asp Gly Ser
          100          105          110
Phe Trp Thr Leu Asp Ala Asn Lys Gly Glu Leu Thr Arg Phe Glu Phe
          115          120          125
Val Ser Asp Arg Asp Ser Leu Leu Arg Ala Glu Ala Ile Ser Phe Asp
          130          135          140
Lys Asp Ser Ile Leu Arg Ala Leu Asp Phe Val Ala Phe Asn Asp Thr
145          150          155          160
Thr Phe Leu Ile Pro Asp Tyr Ser Gly Asp Ser Arg Phe Cys Trp Val
          165          170          175
Asn Arg Gln Gly Lys Phe Leu Lys Lys Ser Gly Val Ile Pro Ser Leu
          180          185          190
Asn Glu Glu Ala Leu Lys Glu Ala Arg Pro Ala Leu Ala Gln Ala Trp
          195          200          205
Arg Ser Phe Ile Asp Tyr Asn Pro His Asn Gly Val Leu Val Ala Ala
210          215          220
Thr Gln Leu Gly Glu Val Leu Glu Ile Tyr Asn Leu Gln Asn Gly Phe
225          230          235          240
His Arg Val Cys Leu Gly Pro Lys Gly Glu Pro Glu Phe Lys Leu Ala

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245 250 255
 Gly Gly Tyr Ala Ile Pro Asp Gly Ile Met Gly Phe Ser Asp Val Gln
 260 265 270
 Val Thr Asp Glu Ala Ile Tyr Ala Val Phe His Gly His Thr Phe Lys
 275 280 285
 Glu Ile Met Ala Gln His Gln Lys Glu Gly Arg Ala Thr Asp Gly Gly
 290 295 300
 Gln Tyr Ile Tyr Val Phe Asn Leu Gln Gly Glu Pro Leu Cys Lys Tyr
 305 310 315 320
 Thr Leu Asp Arg Tyr Ile Thr Gly Phe His Val Asp Glu Arg Asn Lys
 325 330 335
 Thr Ile Thr Ala Thr Asp Val Asn Asn Asp Gln Pro Ile Val Glu Phe
 340 345 350
 Arg Phe Gly
 355

<210> 5946

<211> 187

<212> PRT

<213> B.fragilis

<400> 5946

Asp Glu Met Lys Lys Phe Arg Cys Thr Val Cys Gly Tyr Val Tyr Glu
 1 5 10 15
 Gly Asp Ala Ala Pro Glu Lys Cys Pro Leu Cys Lys Ala Pro Ala Ser
 20 25 30
 Lys Phe Val Glu Val Val Glu Glu Glu Gly Gly Ala Leu Thr Phe Val
 35 40 45
 Asp Glu His Val Ile Gly Val Ala Lys Gly Cys Asp Glu Glu Met Ile
 50 55 60
 Lys Asp Leu Asn Asn His Phe Met Gly Glu Cys Thr Glu Val Gly Met
 65 70 75 80
 Tyr Leu Ala Met Ser Arg Gln Ala Asp Arg Glu Gly Tyr Pro Glu Val
 85 90 95
 Ala Glu Ala Phe Lys Arg Tyr Ala Trp Glu Glu Ala Glu His Ala Ser
 100 105 110
 Lys Phe Ala Glu Leu Leu Gly Asp Cys Val Trp Asp Thr Lys Thr Asn
 115 120 125
 Leu Glu Lys Arg Met Asn Ala Glu Ala Gly Ala Cys Glu Asp Lys Lys
 130 135 140
 Arg Ile Ala Thr Arg Ala Lys Ala Leu Asn Leu Asp Ala Ile His Asp
 145 150 155 160
 Thr Val His Glu Met Cys Lys Asp Glu Ala Arg His Gly Lys Gly Phe
 165 170 175
 Glu Gly Leu Tyr Asn Arg Tyr Phe Gly Lys Lys
 180 185

<210> 5947

<211> 723

<212> PRT

<213> B.fragilis

<400> 5947

Ile Met Met Lys Arg Asn Leu Leu Ser Ala Ala Phe Ala Leu Met Ala
 1 5 10 15
 Leu Ala Val Ser Ala Asp Glu Gly Met Trp Met Leu Thr Asp Leu Lys
 20 25 30
 Ala Gln Asn Glu Ala Ala Met Met Asp Leu Gly Leu Gln Ile Pro Ile
 35 40 45

Glu Glu Val Tyr Asn Pro Asp Gly Ile Ala Leu Lys Asp Ala Val Val
 50 55 60
 His Phe Gly Gly Gly Cys Thr Gly Glu Ile Ile Ser Ala Glu Gly Leu
 65 70 75 80
 Val Leu Thr Asn His His Cys Gly Tyr Gly Ala Ile Gln Gln His Ser
 85 90 95
 Ser Val Asp His Asp Tyr Leu Thr Asn Gly Phe Trp Ala Met Asn Arg
 100 105 110
 Asn Glu Glu Leu Pro Cys Lys Gly Leu Thr Val Thr Phe Ile Asp Arg
 115 120 125
 Ile Leu Asp Val Thr Thr Tyr Val Asn Glu Gln Leu Lys Lys Asp Asp
 130 135 140
 Asp Pro Asn Gly Ile Asn Tyr Leu Ser Pro Lys Tyr Leu Ala Thr Val
 145 150 155 160
 Ala Asp Arg Phe Ala Lys Ala Glu Asn Ile Gln Ile Thr Pro Ala Thr
 165 170 175
 Arg Leu Glu Leu Lys Pro Phe Tyr Gly Gly Asn Lys Tyr Tyr Leu Phe
 180 185 190
 Val Lys Thr Val Tyr Asn Asp Ile Arg Met Val Gly Ala Pro Pro Ser
 195 200 205
 Ser Ile Gly Lys Phe Gly Ala Asp Thr Asp Asn Trp Met Trp Pro Arg
 210 215 220
 His Thr Gly Asp Phe Ser Leu Phe Arg Ile Tyr Ala Asp Lys Asn Gly
 225 230 235 240
 Gln Pro Ala Glu Tyr Ser Lys Asp Asn Val Pro Leu Gln Val Lys Lys
 245 250 255
 His Leu Thr Ile Ser Leu Ala Gly Val Lys Glu Gly Asp Phe Thr Phe
 260 265 270
 Val Met Gly Phe Pro Gly Arg Asn Trp Arg Tyr Met Ile Ser Asp Glu
 275 280 285
 Val Lys Glu Arg Met Gln Thr Thr Asn Phe Met Arg His His Val Arg
 290 295 300
 Glu Ala Arg Gln Ala Val Leu Met Asp Gln Met Leu Lys Asp Pro Ala
 305 310 315 320
 Val Arg Ile His Tyr Ala Ser Lys Tyr Ala Ser Ser Ala Asn Tyr Trp
 325 330 335
 Lys Asn Ala Ile Gly Met Asn Glu Gly Leu Val Arg Leu Lys Val Leu
 340 345 350
 Asp Thr Lys Glu Lys Gln Gln Glu Gln Leu Leu Ala Met Gly Arg Glu
 355 360 365
 Lys Gly Asp Asp Ser Tyr Gln Lys Ala Phe Asp Glu Ile Arg Ser Ile
 370 375 380
 Val Ala His Arg His Asp Ala Met Tyr His Gln Gln Ala Ile Ser Glu
 385 390 395 400
 Ala Leu Val Thr Ala Leu Asp Phe Met Lys Ile Pro Ser Thr Asp Gly
 405 410 415
 Leu Lys Lys Ala Leu Glu Ser Lys Asn Ala Thr Lys Ile Lys Glu Glu
 420 425 430
 Thr Asp Lys Leu Lys Ala Glu Ala Asp Lys Tyr Phe Ala Ser Val Pro
 435 440 445
 Phe Pro Glu Val Glu Arg Leu Val Gly Lys Lys Met Leu Glu Thr Tyr
 450 455 460
 Ala Gly Tyr Ile Pro Glu Asp Gln Gln Ile Gly Ile Phe Lys Val Ile
 465 470 475 480
 Asp Ser Arg Phe Lys Gly Asn Lys Asp Ala Phe Ile Asp Ala Cys Phe
 485 490 495
 Lys Tyr Ser Ile Phe Gly Ser Lys Glu Asn Phe Asn Lys Phe Ile Ala
 500 505 510
 His Pro Thr Leu Asn Lys Leu Asp Lys Asp Trp Met Ile Leu Phe Lys